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ORAL PRESENTATIONS

S1

Suicidal intentionality, attempts and cyclothymic temperament

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Depression is a frequent pathology that especially exposes to the suicidal risk. Lately, researches demonstrated that bipolar depression in the setting of a major bipolar disorder is more purveyor of such a risk. A depressive episode that appears in a cyclothymic temperament is considered as a bipolar II ½. In this form of soft bipolarity, suicidal risk appeared much higher than in classical bipolar-II disorder (Akiskal et al, 2003, data from Epidep study). Also in cyclothymic OCD, the suicide risk is doubled when compared to OCD without cyclothymia (Hantouche et al, 2003, from the national ABC-OCD French study). Other recent reports suggested that significant link exist between cyclothymia and suicidality (Rihmer et al, 2005). In order to elaborate more on this observation a Tunisian controlled study had been conducted in the Sfax University A sample of 51 suicidal attempters was compared with 51 healthy controls. The average age was of 23,1 years (± 6 years); 66% were female, and 72% were unmarried.

The instruments used

- Scale of suicidal intentionality of Beck
- Montgomery and Asberg Depression Rating Scale (MADRS)
- Temperament Evaluation of Memphis, Pisa, Paris and San Diego Auto-questionnaire (TEMPS-A) in its Arab version.
- Socio-demographic data and circumstances of the suicide attempt.

Results:

- 54% of suicide attempters have been depressed, according to MADRS.
- 64% of them have a cyclothymic temperament. (score > 10)
- Depressed suicide attempters have higher cyclothymic temperament score's than those non depressed
- Suicidal intentionality was more important when depressed attempters have a cyclothymic temperament.

These finding suggest and confirm that depression expose more to the suicidal risk when it occurs in patients with cyclothymic temperament.

S2

Mass media as a source of trauma after Armavia jet crash in May 2006 in Sochi

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Annals of General Psychiatry 2008, **7(Suppl 1):S2**

Background: The aim of this presentation is to show the influence of trauma on the psychological well being of the general population after mass media reports.

Materials and methods: The following steps were important: creation of "Hot line" psychological help services for the families of the victims and also for general population; public education; professional education; publication of materials such as a children and grief.

Results: Different stages of post traumatic stress reactions were observed: up to mid June, 40th Day memorial mass, acceptance by the family members loss as a reality; the mourning process continues recurring, sometimes re-experiencing the tragedy of the event, anger as psychological reaction after traumatic loss.

Conclusions: Those families who were not able to find the remains of their loved once having longer denial and mourning processes. The main sources of the news and their 24 hours a day reports about increased details of the private lives of the families who lost a member, detailed and repetitive visual coverage of jet crash. Data and statistical analysis of the calls showing that less than 10% of the calls are from the families of the victims and the rest was from general population. Mass media and in most of the cases television can be a powerful influence in developing post traumatic reactions, not necessarily disorders.

The electronic version of this abstract is the complete one and can be found online at: <http://www.annals-general-psychiatry.com/content/7/S1/S2>

S3

Cyclothymia: from nosological validation to patient caring

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Most groups of psycho-education are currently based and orientated toward the classical clinical picture of bipolarity,

“Bipolar-I Disorder”, which includes intense to severe (hypo) mania phases (often leading to hospitalization). However, the reality of clinical practice shows another evidence: soft bipolar spectrum is probably the most frequent expression of this disorder. More than 40% of major depressions and 2/3 of recurrent or resistant depressions are part of this spectrum, which seems to be highly but neglected in pharmacological and especially in psychological treatment processes.

The French multi-center national EPIDEP study showed that cases classified as BP-II 1/2 (Major Depression plus Cyclothymia) represent the most frequent disorder (33% of all included depressives). Systematic inter-group comparison among the soft spectrum showed the heterogeneity of the soft bipolar spectrum, with special characteristics for “BP-II ½”. Repeated brief swings with high mood instability and rapid switching seemed to be a distinct entity with early onset, irritable (“dark”) hypomania and high suicide risk. This condition emerged as the most prevalent and severe expression of the bipolar spectrum. Cyclothymia is a psychobiological disorder, with brain and body disturbances. It can disturb all life aspects, even daily routines, with important consequences such as failures, isolation, job loss and severe interpersonal conflicts. When untreated cyclothymia can put subject life in danger. Most clinicians still of focus on depression, comorbid anxiety or personality disorders, and usually stay blind to cyclothymia. Initiated by E.G.Hantouche, a psycho-education group model has been elaborated with the help of V. Trybou and C. Majdalani. The model was build on the conception of Cyclothymia as a basic predisposition and not as a minor form of bipolarity. The format is weekly based on six sessions of 2 hours each. To be included, patient must present a bipolar II ½ disorder: persistent and significant cyclothymic trait (score 10 or more on questionnaire TEMPS-A). The group therapy offers to patients the opportunity to get information on soft bipolar spectrum by sharing life experiences with other patients, and getting support from them and from psychologists. The major key points of psycho-education group are listed below:

- Learning about cyclothymia: clinical aspects, specificity, comorbidity, causes, medication, symptoms
 - Monitoring and self assessment of Cyclothymia and warning signs, coping with early relapses, and planning of daily activities and rhythms
 - Getting familiar with psychological vulnerabilities: sensitivity to rejection, obsessive need to please, testing limits, hyper-control, compulsive behaviors, emotional dependency
 - Getting access to the cognitive processes linked to emotional disturbances
 - Dealing with daily interpersonal conflicts
 - Nurturing positive aspects of cyclothymia and own creativity
- During the presentation, open data concerning six consecutive groups therapy will be presented and future orientations will be emphasized.

S4 Structure and function of the therapy department of the Open Psychotherapeutic Center

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Annals of General Psychiatry 2008, 7(Suppl 1):S4

The Therapy Department of the O.P.C. includes a wide range of diagnostic, therapeutic and supportive activities and services for

adults, families, children and adolescents. It consists of the Adults' Therapy Unit, the Child and Family Therapy Unit and three Psychotherapeutic Communities. It is addressed to patients who belong to a wide range of diagnostic categories, however the higher percentage of those who addressed are severely disturbed (psychoses, personality disorders, affective disorders).

The application of the multifactorial approach which depending on each case, consists a combination of Dyadic Therapy, Group Analysis, Therapeutic Community, Family Therapy, Pharmacotherapy, appears to be quite effective during the 27 years of our clinical experience.

S5 The multifactorial approach: the psychotic patients

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Annals of General Psychiatry 2008, 7(Suppl 1):S5

We present some data from the treatment of psychotic patients through a multifactorial approach which has been developed during 25 years of experience, at the Open Psychotherapy Centre (O.P.C.), an open daily non-residential therapeutic community environment. The therapeutic approach of the O.P.C. is, mainly, Group - Analytic, in combination with Therapeutic Community, Psychodrama and Family Therapy principles. This multifactorial scheme facilitates on the one hand the therapist's role, by the creation of a therapist's group which gets involved in the whole therapeutic process, while on the other hand it functions more effectively as it engages the psychotic patient as well as his/her family in a wide group therapeutic context, directly or indirectly. The above data are presented in comparison to the recent relevant literature in an attempt to delineate the interrelation of individual and group factors that contribute to the favourable outcome.

S6 The multifactorial approach: children and adolescents

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The paper describes the therapeutic process in the case of a pre-adolescent with symptoms of functional primary encopresis, based on a multifactorial treatment for children and adolescents. The specific therapeutic regiment includes participation both of the identified patient (child or adolescent) in group therapy activities (Multiple Activity or Psychodrama Group or Adolescent Group Analysis type), as well as and of the parental couple in a parents group on a monthly basis. It has been established that the above therapeutic regiment helps in developing the general aspect both of individual and family potential, which helps to utilize the healthy potential of the family system, to the advantage of both the 'patient' and the other family members. The above therapeutic regiment appears to: 1) unify the family structure when split to the differentiated roles attributed first to healthy members (parents, siblings) and second to the unhealthy member (identified patient). 2) To mobilise the therapeutic potential in the family structure which in turn favours the persistence of the patient in his/her therapy, and 3) Enhances the benefits development and evolution both of the family structure

as a whole and of each family member separately, especially of the identified patient who will gradually be relieved of the symptom which might not be mentioned at all during therapy.

S7

The multifactorial approach: a case study

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Annals of General Psychiatry 2008, 7(Suppl 1):S7

In this presentation, a case study which was treated through the multifactorial approach (Dyadic Therapy, Therapeutic Community, Group Analysis, Family Therapy, Pharmacotherapy) is presented. The above study case illustrates the dynamics which have arisen in this kind of multi level approach, as well as the resulting potentialities for more effective therapeutic interventions. The effectiveness of the approach is also discussed.

S8

Substantial genetic overlap between neurocognition and schizophrenia: genetic modeling in twin samples

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Results from the first study to use twin modelling to quantify the genetic overlap between schizophrenia and neuropsychological function will be presented (recently published [1]). In the largest UK study of twins with schizophrenia two hundred sixty seven twins were invited to complete a comprehensive series of intelligence and memory tests. Both identical and non-identical twins took part, in some pairs both twins were affected by the illness and in others only one twin. Sophisticated genetic modelling statistical analyses were then used to determine to what extent the intelligence deficits were related to the genetic risk for the illness. The study reported a significant correlation between intelligence and schizophrenia with 92% of the covariance between the two accounted for by shared genetic variance. Genetic influences also explained most of the covariance between working memory and schizophrenia. Environmental effects, though separately linked to neurocognition and schizophrenia did not in general contribute to their correlation. The implication of the study is that Intelligence and working memory may be the key to identifying the genes for schizophrenia.

Reference

1. Touloupoulou T, Picchioni M, Rijdsdijk F, Hua-Hall M, Ettinger U, Sham P and Murray R: **Substantial Genetic Overlap Between Neurocognition and Schizophrenia: Genetic Modeling in Twin Samples.** *Arch Gen Psychiatry* 2007, **64**:1348–1355.

S9

Introduction to auditory processing disorder – the language ‘barrier’

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Annals of General Psychiatry 2008, 7(Suppl 1):S9

Medical Psychoacoustics is the field of science dealing with the way human beings perceive auditory phenomena and the interrelation with the physical characteristics of sounds; extending from the simplest (a tone) and going all the way to the most complex everyday life sounds such as speech and music. When perceiving sounds, a human being uses first of all his hearing. Additional functions involve attention, language abilities, memory, learning, as well as vision. All of them need to be intact in order for the auditory perception to work properly, especially in highly demanding auditory situations and/or conditions.

Real time processing of auditory stimuli involves the transformation of auditory into mechanical energy and subsequently into electrical pulses. During the peripheral processing higher ordered functions from the central auditory nervous system (CANS) are simultaneously involved in the rapid and detailed processing leading into accurate perception.

Assessment of the central auditory nervous system in people with normal audiograms was gradually made feasible with the development of two tests: a speech test in which the low frequency acoustic features of the speech signal had been removed (Bocca, Calearo & Cassinari, 1954) and the Broadbent (1954) invented the dichotic listening technique, which was employed by Kimura (1961) in the study of both normal subjects and patients with brain lesions and which was additionally employed in the evaluation of brain laterality.

In our attempt to construct a diagnostic test battery, the major obstacle was the many speech based tests that are currently being used for Auditory Processing Disorders. The tests included in our test battery finally were: 1. a dichotic digits one, used as early as the 80ies, 2. a newly developed speech in babble test, 3. a Frequency Pattern Sequence Test, 4. a Duration Pattern Sequence Test, 5. a Masking Level Difference Test and 6. a GAP detection test. Verbal tests are mostly used as speech is a highly complex auditory signal but auditory and language processing are not clearly separated while testing.

Our initial results indicate that if failing two of the central auditory processing tests was the criterion to put the APD diagnosis then 54 in 177 children are diagnosed with some degree of auditory processing deficit. Additional testing is being done with IMAP software providing some information on auditory and visual attention. Further research is needed to optimize diagnosis and assist in the most appropriate management of the condition.

S10

Two classes of auditory processing disorder (APD) in children

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Building on definitions of APD that suggest problems in the perception and awareness of basic sound comparisons (e.g. temporal and spectral resolution), we have examined the ability

of large samples of 6-11 year old children to perform relatively simple audiological, auditory processing, speech-in-noise and cognitive tasks. Initial analysis shows that poorly performing children usually respond inconsistently to test items in one or more of these tasks. The proportion of these 'non-compliant' children decreases dramatically with increasing age. A second, smaller group of children are 'genuine poor performers'. They respond consistently, but at a level that is outside the range appropriate for their age. We are currently examining the performance of both these groups of children on other tasks, including various measures of spatial hearing, attention, speech intelligibility and communication skills.

S11

Auditory processing in schizophrenia

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Annals of General Psychiatry 2008, 7(Suppl 1):S11

Auditory hallucinations are a frequent, principal and disabling symptom of schizophrenia, however, little is known about their pathophysiology. The "voices inside the head" are very disturbing and the fact that the source of the "voices" is often described as being "on the outside" of the patient greatly contributes to the feeling of diffusion of the patient's personality, as well as on their weak control of what is real and what is imaginary.

"Hearing voices" in the absence of an auditory stimulus is obviously due to pathological perception. In trying to track down the pathological pathways of perception, suggestions have been made that auditory hallucinations may be associated with subvocal speech, a literal interpretation of "thinking aloud". Other hypotheses include the loss of automatic inhibition of auditory processing of self-generated speech or hemisphere asymmetry manifested by disturbances of speech perception, lateralized to the left temporal lobe as can be studied experimentally in a dichotic listening paradigm. Also, it has been theorized that, given the presence of the frontal lobe syndrome in schizophrenia, patients with schizophrenia have a significantly diminished ability to cognitively modulate and process an auditory stimulus by focusing attention.

This presentation will be a brief review of the above theories as well as methods undertaken by researchers to support them.

S12

Auditory processing disorders in neurological patients and in patients with developmental disorders

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Annals of General Psychiatry 2008, 7(Suppl 1):S12

In the mid 1950's, Bocca, Calearo and Cassinari (1954) made the seminal observations that patients with temporal lobe tumours complained of hearing difficulties, despite the presence of normal hearing thresholds and normal speech recognition in quiet. Around the same time, Myklebust (1954) proposed that central auditory function ought to be considered and assessed in

children with communication disorders. Over the last 20-30 years, it has become increasingly recognised that impaired structure and/or function of the brain may have little or no effect on hearing thresholds, but may cause deficits in other aspects of the hearing process. These deficits are collectively referred to as an "auditory processing disorder" (APD). Recent progress in auditory neuroscience has only just begun to translate into clinical practice, with the development of more sensitive and specific test batteries for APD, however, at the moment there are no universally accepted diagnostic criteria for APD. The first part of this presentation will discuss auditory processing deficits and related disabilities in neurological patients (e.g., in patients with cerebrovascular accidents, demyelinating disease etc) and how studies of patients with defined anatomical lesions may be complementary to functional imaging studies in normal populations in that they may help define brain regions that are necessary to support specific auditory functions. The second part of this lecture will review in brief what is known about the presence of auditory processing deficits in patients with developmental disorders such as dyslexia, attention deficit disorder and specific language impairment and will discuss some related controversies.

S13

Are men and women equal in front of depression?

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Annals of General Psychiatry 2008, 7(Suppl 1):S13

The speech will examine the sex related differences in depressive disorders under several perspectives. The prevalence of depression to begin with, where factors underlying the female overrepresentation will be presented; then the differential access to health care, more restricted in males, will be discussed; next the gender specificities in clinical forms, suicidal behaviours and course of illness will be compared; and finally data suggesting distinctive responses to treatments, both pharmacological and psychotherapeutic, will be presented.

S14

Depression in children and adolescents

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Annals of General Psychiatry 2008, 7(Suppl 1):S14

Depression in childhood has been recognized as a separate clinic entity since 1970's. Recent studies have shown that it is a very serious disorder, which involves the risk of perpetuation or relapse and it has a great impact on child's functioning, as well as on the whole family's life. Clinical features vary according to child's developmental phase. Depressive symptomatology is expressed more by somatic symptoms and conduct problems than verbal formulation concerning the depressive feelings. The usual comorbid conditions of child depression are anxiety disorders, learning disorders and conduct disorders. The aetiology of child depression is multi-factorial. The genetic factor implicates the children of depressed parents. These children are in a higher risk status for the development of the disorder. Negative life events often signify the onset

of a depressed episode. Cognitive approaches have studied the important cognitive distortions, which are implicated in low self-esteem, as well as, in self-criticism concerning the depressed children. Psychodynamic approach has been based on the study of those psychic mechanisms, which are involved in confronting of a loss.

Therapeutic procedure involves child's psychotherapy as well as parental consulting. Drug therapy is administered in serious cases. While tricycles antidepressants proved not to be more effective than placebo, the new generation anti-depressants (SSRI) are more promising.

There is a need for the development of more appropriate early intervention strategies targeting at primary detection and treatment. Depression in adolescence is manifested with increasing frequency, with detrimental effects in the personal and social life of the adolescent and is directly related to the danger of attempting suicide.

Before the 80's, depression in adolescents was not commonly referred to, due to its atypical clinical picture which was perceived as being correlated to the crisis of adolescence. The outcome was expected to be propitious and its treatment was related to the end of the adolescence period.

The spectacular increase of suicidal attempts and the actual rate of suicides committed during adolescence, led to numerous studies concerning the epidemiology, the clinical picture, the aetiopathogenesis and the treatment of depression in adolescence.

In accordance to the current evidences, it is demonstrated that the manifestation of depression in adolescence is common, its clinical picture resembles some peculiarities than differentiate it from adult depression, while there is an increasing danger of the continuation of the pathology to adult life.

Various genetic, familial, demographic, psychosocial cognitive and biological factors have been identified as being correlated to the onset and the development of the disorder.

Identifying depression in adolescence is difficult due to the attitude kept by the adolescent, who does not himself seek help for this problem and due to the attitude kept by the adults, parents, teachers, doctors who observe mostly the external behavioral disturbances and not the adolescents' anxious or depressive emotions.

In attempting to treat depression a number of cognitive, behavioral, psychoanalytic and systemic approaches have been proposed whether in conjunction to pharmacotherapy or not and have given contradictory results.

The importance of depression in adolescence demands for greater concentration to its diagnostic estimations and therapeutic interventions.

S15

Female depression

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Depression is different in women. It is well known that depression in women occurs at a rate twice that of men. Women often experience different symptoms such as somatic symptoms, reverse vegetate symptoms or anxiety and more often experience seasonal affective disorder. Depression in women has a different course and a different response to

treatment. Women may take longer to respond to antidepressant therapy, require lower dosages and experience more side effects than men. Yet, women attempted suicide more often but much less often successfully. Mood disorders in women include depressive syndromes during specific periods of their life cycle such as: the premenstrual dysphoric syndrome, the depressive syndrome during pregnancy, the postpartum mood disorders and the depressive syndromes during the perimenopausal period.

S16

Male depression

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Male depression is a disease with devastating consequences. 80% of all suicides in the US are men. The male suicide rate at midlife is three times higher than women's, for men over 65, it is seven times higher. The symptoms of male depression can be different from the classic symptoms we associate with depression. Most importantly though, men deny they have problems because they are supposed to "be strong". The symptom cluster of male depression is not well-known so family members, physicians, and mental health professionals fail to recognize it. It can take up to ten years and three health professionals to properly diagnose this disorder. Apart from the usual symptoms depression is associated in men with: Anger and frustration, violent behaviour, weight loss without trying, taking risks, such as reckless driving and extramarital sex, loss of concentration, isolation, fatigue, alcohol or substance abuse, misuse of prescription medication, bouts of crying less often than women. In addition, men often aren't aware that physical symptoms, such as headaches, digestive disorders and chronic pain, can be symptoms of male depression. This presentation will review the literature on aetiology, presentation and treatment for men with depression.

S17

Depression in the elderly

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Annals of General Psychiatry 2008, 7(Suppl 1):S17

Depression is highly prevalent in elderly individuals. The overall prevalence of major depressive disorder in the community in persons 65 years old or older has been calculated as about 1,3–4%, of dysthymic disorder 2%, of minor depressive disorder 4–13% and of depressive symptoms about 8–16%. The prevalence of various types of depression in primary care, inpatients settings and in long-term-care is higher. Depression in the elderly is more frequent in women and widowers, in individuals who are isolated, institutionalized as well as in those facing stressful events and being economically impoverished. Moreover, low volumes of frontostriatal structures and hyperintensities in subcortical structures have been reported in depressed elderly. Thus, psychological adversity may trigger depression to already biologically or genetically vulnerable persons. Depression frequently affects patients with chronic physical illnesses and cognitive impairment. It causes suffering, disability and

dependence, it increases drug consumption and it worsens the outcome of physical illnesses and the patient's quality of life. Depression also increases mortality, suicidality and family burden as well. Clinical features unique to depressed elderly are not included in the current DSM IV and ICD 10 criteria. However, depressed elderly often manifest an inhibition to express their sadness and they frequently tend to somatize their complaints. These features of late-life depression may lead inexperienced clinician to miss the diagnosis. Antidepressant medication of an SSRI or an SNRI is considered as treatment of choice. Lastly, psychosocial interventions could be helpful, mainly when they adjunct to other treatments of a comprehensive management of late-life depression.

S18

Temperament and psychiatric disorders

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Several studies have shown an association between temperament and psychiatric disorders assessed in clinical and/or specific community samples. In Lebanon, the Temperament Evaluation of the Memphis, Pisa, Paris and San Diego-Auto questionnaire (TEMPS-A) has been used to evaluate temperament on a national sample of Lebanese adults as part of the Lebanese Evaluation of the Burden of Ailments and Needs Of the Nation (LEBANON) study. First results from this study have confirmed the aforementioned relationship between temperament and psychiatric disorders, including anxiety and mood disorders, albeit for the first time in a national sample. The effect of temperament is holding true even after controlling for sociodemographic factors such as age, gender, education, etc., all known to predispose individuals to mental disorders.

S19

Bipolar affective disorders and temperaments

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Since ancient times has there been knowledge of affective temperaments - with descriptions ranging from Hippokrates and Galenus to Kraepelin and Kretschmer (in the early 20th century). Whilst temperament can be broadly defined as "an individual's characteristic or habitual inclination or mode of emotional response", there are three different underlying concepts of temperament, which are based on (1) psychopathology (e.g. Kretschmer or Akiskal), (2) neurobiology (e.g. Eysenck or Gray) or (3) developmental observations (e.g. Chess or Kagan). Despite some undisputable overlap, it is noteworthy that "temperament" differs significantly from "character" or "personality". Recent research has confirmed that there is a

genetic basis to temperament. For example, links to the serotonin transporter gene 5HTTLPR polymorphism have been made. In regards to temperament other neurobiological systems including the HPA axis have been studied as well as issues of gender, ethnicity and psychosocial factors.

There exist several instruments to assess temperaments in their various conceptualizations. The TEMPS-A scale and the TEMPS-I interview reflect the temperament concept as outlined by Akiskal and others in Memphis, Pisa, San Diego and elsewhere. It assesses 5 forms of temperament: depressive, anxious, cyclothymic, irritable and hyperthymic. Translations into Italian, German, Hungarian, Turkish, French, Portuguese and other languages are available.

The relation between affective disorders and temperaments seems to be complex. There is increasing evidence that temperaments may be subclinical forms of affective disorders or that they might represent vulnerability to affective disorders. Therefore, they belong to a broad affective (bipolar) spectrum. Furthermore, they seem to mitigate course and symptomatology of affective disorders. Several studies have shown that mixed episodes go along with distinct temperament profiles (high depressive, anxious, cyclothymic or irritable and low hyperthymic temperament), so that acute psychopathology and underlying temperament "mix". Furthermore, temperaments seem to be factors, which may explain difficult-to-treat cases, as they may reflect aspects of comorbidity of affective disorders – for example with anxiety disorders or substance abuse, or may explain personality pathology including some forms of borderline personality disorders. From a theoretical background one can speculate about the relevance of temperaments for treatment strategies. Nevertheless, this area lacks empirical studies.

Altogether the concept of temperaments is an interesting perspective to better understand affective disorders. While historical and clinical knowledge in this area is plentiful, nowadays there is also emerging empirical support for this concept.

S20

Depression among elderly patients in a General Hospital setting

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With the overall increase of life expectancy, the population of individuals above the age of 65 has increased. Consequently, there is an increase in the frequency that this old age group is admitted in the General Hospital.

For the elderly patient, hospital admission is an intensely stressful event. Facing a physical illness, the unknown and sometimes faceless environment of the modern hospital and the separation from family and friends disturbs the frail emotional balance that characterizes the elderly patient. This "disturbance" of the physical, psychological and social wellbeing of the elderly is not restored by treating the physical reason for admission alone.

Psychiatric disorders are very common in these patients and depression is the most common. Findings from research worldwide will be presented as well as findings from our own prospective study in Attikon University Hospital.

The detection and treatment of psychiatric disorders in elderly General Hospital patients presents a challenge for the psychiatrist. Some factors hinder this effort. Firstly, the patients might be unable to cooperate because of hearing or sight problems but also because of forgetfulness and problems in concentration. The differential diagnosis especially of depression and its treatment have many difficulties.

All these emphasize the great need for training in old age psychiatry the General Hospital psychiatrists. There is also a great need for the detection of cognitive deficits and depression with easy to use screening tests in order to facilitate the psychiatrist's work.

S21

Dementia in the General Hospital

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Dementia is a serious disorder that appears with increasing frequency in elderly individuals. The elderly are also using the health services more frequently and to a greater extent. It is not unusual for dementia to remain undiagnosed in the early stages of the disease. Admission of an elderly individual for a physical reason, can offer a great opportunity for the diagnosis of dementia. The aim was to review the scientific literature regarding the diagnosis and treatment of a demented patient in the General Hospital and to review easy to administer and reliable screening instruments for the detection of dementia. The scientific literature on the subject is limited. Despite that, there are strong indications that patients with dementia have longer admissions, greater mortality and receive more neuroleptics than non demented patients of the same age and with a similar physical ailment. The most commonly used instruments for the detection of dementia are the "Mini Mental State", the "Clock drawing test" and history taking.

Conclusively, the admission to the General Hospital offers an opportunity for the early detection of dementia. Medical and surgical specialties need to be sensitized and trained in order to detect symptomatology indicative of dementia and refer the patient to the liaison psychiatric team.

S22

Adjustment reactions and bereavement in the elderly

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In this presentation, adjustment reactions are considered as a maladaptive reaction to the loss of a previous state of life and are differentiated from bereavement, a psychological and emotional response, and from Major Depression and other Psychiatric disorders. Bereavement and old age are approached as the emotionally charged factors which both are characterized by the common element of loss, lead to a crisis, demanding changes and setting off reactions in order to achieve a more functional adjustment.

S23

Early postnatal stress and the serotonergic system

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The aim of the present study was to assess whether traumatic events during the early postnatal period would affect the rat brain development of the serotonergic system underlying regulation of emotional expressions. Rats that had received aversive stimuli foot shock (FS) at the postnatal period of the second week (2W-FS), but not the third week (3W-FS), markedly reduced fear-related freezing behavior during exposure to contextual fear conditioning (CFC), at the post-adolescent period (10-12 week old). This anxiolytic behavior observed in 2W-FS was mimicked by electrolytic lesion of the median raphe nuclei, from which the major serotonergic projections to the hippocampus arise. In 3W-FS, as well as non-FS controls, synaptic transmission in the hippocampal CA1 field was suppressed by the serotonin (5-HT)_{1A} receptor agonist. This synaptic inhibition was not found in 2W-FS. These findings suggest that aversive stress exposed at the early postnatal period might affect the serotonergic development, thereby emotional responses to the post-adolescent fear stimuli. In other words, the "critical developmental period" appears to exist for the serotonergic system involved in emotional expressions, which is attributable to the lifelong susceptibility to emotional stimuli.

S24

Social isolation stress enhances the effect of 5-HT_{1A} agonist 8-OH-DPAT on the rat elevated plus-maze

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Social isolation stress in the early stages of life has been shown to alter a variety of behaviors in the mature animals and the responsiveness to psychoactive drugs. The aims of the present experiments were to investigate the effect of rearing rats in social isolation on anxiety using the elevated plus-maze and to compare the effect of the selective 5-HT_{1A} receptor agonist, 8-hydroxy-2-(di-n-propylamino)tetrinalin (8-OH-DPAT) on the plus-maze behaviors in isolation and socially reared rats. Male Wistar rats were reared from weaning (21 days of age) either alone (isolation rearing) or in groups of six rats/cage (social rearing) for four weeks. Both isolation and socially reared rats were exposed to the elevated plus maze either without drug pretreatment or following acute administration of 8-OH-DPAT (0.05, 0.1 and 0.5 mg/kg s.c.) or saline 30 min before a 5 min test. The results show that the plus-maze behaviors of the drug free isolation reared rats were not significantly difference from the socially reared rats. Pretreatment of 8-OH-DPAT (0.05, 0.1 and 0.5 mg/kg s.c. 30 min

before testing) in both isolation and socially reared rats produced a dose-related anxiogenic profile, indicated by a reduction in the percentage of open arm entries and the percentage of time spent on the open arms. The anxiogenic-like effect of 8-OH-DPAT was greater in the isolation than the socially reared rats ($P < 0.05$). The results suggest that social isolation stress from the early stages of life may produce some of the behavioral effects through central serotonergic mechanisms. 8-OH-DPAT produces greater responding in social isolation stress rats, indicating supersensitivity of the postsynaptic 5-HT_{1A} receptor in the stress rats.

S25

Social isolation alters GABAA receptors plasticity and function: effect of voluntary consumption of ethanol

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In social isolated rats brain and plasma levels of progesterone metabolites, $3\alpha,5\alpha$ -TH PROG(AP) and $3\alpha,5\alpha$ -THDOC (THDOC) are reduced while the positive effects of acute stress or acute ethanol on the content of these steroids are enhanced. The ethanol-induced increase in the abundance of AP is more pronounced in the brain than in the plasma of socially isolated rats. Accordingly, social isolation enhanced the effects of ethanol on the amounts of steroidogenic acute regulatory protein (StAR) mRNA and protein in the brain. Moreover, the ability of ethanol to inhibit isoniazid-induced convulsions is greater in socially isolated rats than in group-housed animals, an effect abolished by finasteride, an inhibitor of AP synthesis. In socially isolated rats, the amounts of the $\alpha 4$ and δ subunits of the GABAA receptor in the hippocampus were increased, an effect associated to an increase in GABAA receptor-mediated tonic inhibitory currents in granule cells of the dentate gyrus. Ethanol also increased the amplitude of GABAA receptor-mediated miniature inhibitory postsynaptic currents (mIPSCs) in CA1 pyramidal neurons with a greater potency in slices from socially isolated rats than in those from group-housed, an effect inhibited by finasteride.

According with the evidences that separation of rats from their peers during adolescence and adulthood increases voluntary ethanol consumption, isolated rats who had access to increasing concentrations of ethanol for 4 weeks, exhibited higher level of ethanol ingestion than group-housed animals. Voluntary ethanol consumption during social isolation abolished the reduction of the brain and plasma content of AP and THDOC, the enhanced potency of ethanol on mIPSC recorded from CA1 pyramidal neurons, and the acute stress-induced increase in neuroactive steroid concentrations in the cerebral cortex and plasma.

These data suggest that the natural preference for ethanol may be related to the effect of this drug on the levels of neuroactive steroids, and that chronic stress due to social isolation may induce plastic adaptation of neuronal systems that contributes to a vulnerability to alcohol abuse.

S26

New strategies in behavioural phenotyping research: from individual domains to modeling domain networks

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Stress plays a key role in pathogenesis of anxiety and depression. Animal models of these disorders are widely used in behavioral neuroscience to explore stress-evoked brain abnormalities, screen anxiolytic/antidepressant drugs and establish behavioral phenotypes of gene-targeted or transgenic animals. Here we discuss the current situation with these experimental models, and critically evaluate the state of the art in this field. Noting a deficit of fresh ideas and especially new paradigms for animal anxiety and depression models, we review existing challenges and outline important directions for further research in this field. Potential strategies for the development of new animal paradigms include 1) modeling different subtypes of anxiety and depression, 2) their common pathogenesis, 3) the use of a wider spectrum of parameters, techniques and model objects. With psychiatric nomenclature and diagnostic criteria subject to constant modifications and reconsiderations, we may also benefit from 4) targeting a wider cluster of related behavioral phenomena (e.g., obsessive-compulsive disorders, Tourette's syndrome, addiction), 5) expanding models beyond traditional "anxiety" and "depression" domains, and 6) using "hybrid" models and tests. Together, these approaches will allow a better focus on the neurobiology of stress, enabling further integrative modeling of mood, behavioral and personality disorders consistent with recent trends and paradigm shifts in modern psychiatry. One of the main reasons to invest time and efforts into new "integrative" models of anxiety and depression is the possibility to discover new agents or even principally new classes of psychotropic drugs, the need for which has long been recognized. In addition, this approach will increase our understanding of pathogenesis of anxiety and depression, and the link between these disorders and other brain illnesses.

S27

Naive questions on consciousness from a psychiatrist to non-psychiatrists

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In the beginning we present some of the usual definitions of conscience and we locate their defects, as well as the way those defects reflect on the discovery of a correct method for the studying conscience.

Consequently, we present some of the characteristics of conscience, such as e.g. that conscience is not "general" but always pertaining to something specific, that conscience belongs to someone and separates Ego from a non-Ego world, that the limits between the self and the environment are established gradually and are -to a certain extent- a product of learning. We also mention the special example of self-conscience.

Based on all of the above, "naive" questions are made to the other scientists of the round table (biologist, computer scientist, and mathematician), such as e.g. about whether the content of

conscience is being influenced by non-conscious factors, about how conscience is organized according to the first and the second system of reality markers, from which point in evolution we can speak of conscience, what are the time limits of conscience, about whether an intact conscience is a prerequisite of the freedom of individuals, and finally, about whether a mathematical model of conscience could be suggested.

S28

Biological aspects of consciousness

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Consciousness, although experienced in our every day life, has not been adequately discussed by biologists, because of the difficulties to analyse consciousness with the conventional established methods of biology. The observer is in an uncomfortable position. As a human being, he/she participates in the life processes and at the same time he/she has to become an isolated external observer in order to analyze life. In addition to those difficulties, lack of connective biological theories, lack of detail knowledge of the molecular structures and the resulting functions, of the mechanisms of transmission of genetic information, the propagation of the cells, has kept biology far from addressing the consciousness issue. Selected biological aspects of consciousness will be discussed taking into account three biological fundamentals: a) the structure and function (every structure facilitates a function, and every function depends on some structure), b) the understanding of link genotype – environment – phenotype and c) the definition of structural and functional groups under the detailed molecular-biochemical-anatomical analysis based on complexity. Thus, Evolution by means of natural selection, and by Selection as a generalization in a wider cultural context, is expected to contribute towards the clarification of certain aspects of consciousness.

S29

Consciousness and individual freedom

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Consciousness and individual freedom have been the subjects of several discussions in philosophy as well as in the philosophy of science.

Selected points of the ongoing debate will be addressed from Aristotle times to the modern complexity issues.

S30

Towards the mathematics of consciousness

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Consciousness goes beyond the conventional syntactic Language of mathematics, as it refers to and is based on Semantic processing.

The emergence of Meaning based on the realization of novelties is possible only in open systems far from equilibrium admitting a so-called Internal Time operator.

Typical examples of such systems are those with highly interdependent components manifesting chaos and complexity. The Internal Time operator selects the innovations produced by the system during the 'flow' of clock time. These points may be seen as requirements of the 'Consciousness software' although the very concept may be debatable.

S31

How prevalent are mental disorders in developing countries?

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Background: A national epidemiologic survey was conducted in Morocco in 2003-2004 in order to assess the prevalence of mental disorders in a representative sample of the general population.

Methods and subjects: About 5,600 persons accepted to be interviewed. The instrument used was the M.I.N.I. in its colloquial Moroccan Arabic, which was validated in a previous study.

Results: The point prevalence of mental disorders was as follows: depressive disorders: 26.5%; suicidal ideation: 16.6%; bipolar disorder: 3.2%; Panic disorder: 6.6%; Social phobia: 6.3%; OCD: 6.6%; PTSD: 2.1%; alcohol dependence: 1.4%; substance abuse: 3.0%; GAD: 9.3%.

All in all, about 48.9% of the sample showed one or another mental disorder. Comparisons will be shown with the same instruments in some European and some African countries.

S32

Neurobiology of schizophrenia and bipolar disorder

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An understanding of the neurobiology of schizophrenia and bipolar disorder has implications for treatment and outcome. The neurodevelopmental hypothesis of schizophrenia is of greatest importance in the neurobiological understanding of the aetiopathogenesis of schizophrenia. This hypothesis focuses on insults to prenatal brain development, which lead to brain alterations. Premorbid cognitive disturbances as well as behavioural abnormalities are interpreted as vulnerability markers in the context of this neurodevelopmental theory and are seen as a consequence of the premorbid brain alterations. Given the fact that heritability alone cannot explain schizophrenia or bipolar disorder, nongenetic factors impairing development must also be part of a multifactorial aetiopathogenesis of these disorders. The neurodevelopmental models have varied considerably with respect to specificity and timing of hypothesized genetic and environmental "hits".

In recent years longitudinal brain imaging studies of both early and adult onset populations with schizophrenia indicate that progressive brain changes are more dynamic than previously

thought, with grey matter volume loss particularly striking in adolescence and appearing to be an exaggeration of the normal developmental pattern. This supports an extended time period of abnormal neurodevelopment in schizophrenia in addition to earlier "lesions". In schizophrenia, grey matter decreases have been detected in temporal lobes, hippocampus, frontal lobes, thalamus, amygdala and cingulate, and abnormalities in prefrontal white matter, corpus callosum and the Posterior superior temporal gyrus. It is of special interest that schizophrenia susceptibility genes and chromosomal abnormalities, particularly examined for early onset populations, are associated with premorbid neurodevelopmental abnormalities. Postmortem human brain and developmental animal studies document multiple and diverse effects of developmental genes (including schizophrenia susceptibility genes) at sequential stages of brain development. Increased specificity for the most relevant environmental risk factors such as exposure to prenatal infection, and their interaction with susceptibility genes and/or action through phase-specific altered gene expression, now both strengthen and modify the neurodevelopmental theory of schizophrenia.

Structural neuroimaging studies of bipolar disorder patients have found increased white matter hyperintensities in periventricular white matter, frontal lobes, and basal ganglia.

These abnormalities occur more commonly in bipolar disorders than in schizophrenia. Evidence suggests reduced grey matter in prefrontal brain regions and anterior thalamus, and volume changes have also been found in the amygdala and hippocampus. Multiple cases of schizophrenia, bipolar disorder and concurrent psychosis and mood disorder occur in some families. There is statistically significant evidence that bipolar disorder occurs at an increased rate in relatives of schizophrenic probands and in the relatives of bipolar probands. Susceptibility genes have been found, some specific to schizophrenia, some to bipolar disorder and yet others that influence susceptibility to schizoaffective disorder, schizophrenia and bipolar disorder.

In the past years, in addition to the neurodevelopmental disorder a neuroprogressive brain disorder has been under discussion to explain the decline especially in the poor outcome subgroup of schizophrenic patients. This presentation will discuss the available findings about similarities and distinctions in the neurobiology of schizophrenia and bipolar disorder.

S33

The metabolic syndrome and antipsychotic treatment

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The metabolic syndrome is a multi-factorial disease of considerable heterogeneity but is generally considered to encompass the clustering of obesity, hypertension, impaired glucose-tolerance and dyslipidemia. It is a major cause of concern in modern medicine and it is a significant risk factor for both cardio-vascular diseases (CVD) and overall mortality and morbidity. The incidence for metabolic syndrome increases with advancing age and increasing adiposity. Patients with mental illnesses have a reduced life expectancy compared with the General Population and CVD contributes significantly to this.

People with mental illnesses often have an increased risk for CVD because of a higher prevalence of obesity, smoking, diabetes and hypertension and dyslipidemia. Additionally, they have lifestyle factors that often contribute to the development of a metabolic syndrome. Patients, specifically with schizophrenia or bipolar disorders are prescribed psychotropic medications that have different weight-gain liabilities and differing risk of causing components of the metabolic syndrome. Additionally, psychotropic medications may change spontaneous activity levels due to the commonly occurring side effects of sedation and possible Parkinsonism. More scientific and clinical research is required to improve the understanding of fundamental biochemical disorders underlying the metabolic syndrome and the central nervous system and peripheral receptor biochemistry involved in the development of insulin resistance. It is apparent that psychotropic medications differ in their level of inducing metabolic syndrome and therefore the mechanisms of these psychotropic medications need to be better understood, very likely on a peripheral level of insulin resistance.

S34

The potential application of personalized medicine to antipsychotic treatment: genetic prediction of extrapyramidal and metabolic adverse effects

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Extrapyramidal symptoms (EPS) such as antipsychotic-induced parkinsonism (AIP) and tardive dyskinesia (TD) are the most prominent adverse effects of first generation (or typical) antipsychotics (FGAs). Most clinicians would agree that concerns regarding EPS are the most important factor limiting prescription of FGAs. As a consequence, and not because of greater efficacy, second generation (or atypical) antipsychotics (SGAs) are rapidly becoming the first line treatment for schizophrenia and other psychotic states. The extensive use of SGAs has uncovered serious adverse effects of these agents. Prominent among these are weight gain, which may be extensive and widespread, hyperlipidemia and diabetes. Although EPS are common among patients administered FGAs and metabolic syndrome is frequent in patients who receive SGAs, a substantial proportion do not develop these adverse effects. Genetic factors may contribute substantially to this variable, inter-individual susceptibility. Identification of the specific genes involved could open the way to the application of a personalized medicine approach to the prescription of antipsychotic drugs. The most likely model is multifactorial and polygenic and several different genes are likely to be involved. Extensive research is under way to identify these genes and develop valid and clinically applicable predictive models. Associations with meta-analytic support include the role of variants in the dopamine D3 receptor gene (DRD3) and the 5-HT2A receptor gene (HTR2A) in susceptibility to TD. More recent findings from our group include the potential role of the regulator of G protein signaling 2 gene (RGS2) in susceptibility to AIP. In parallel, a search is under way for genes that confer susceptibility to weight gain and metabolic syndrome in patient treated with SGAs. Our group

and others have focused on genes that influence lipid metabolism. The results of whole genome analyses can be expected to further advance the field. Considering that genetic factors may also influence therapeutic effects, it is clear that personalized medicine in the field of antipsychotic treatment will not involve a single genetic test but a multivariate tapestry of genetic and environmental factors that will need to be taken into consideration in the context of a predictive algorithm. Development of this algorithm is less challenging at the technological and computational level than the implementation of urgently-needed, appropriately designed clinical trials to identify the genes involved.

S35

Informed pharmacotherapy of psychosis: carrying research results to everyday clinical practice

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The advent of second generation antipsychotic drugs is nowadays considered as a hallmark in the history of psychopharmacology. The clinician treating psychotic disorders is today “backed” by guidelines which present as a first choice drug one belonging to the group of second generation antipsychotics. Certainly the so called “second generation group antipsychotics” present a dauntingly interesting side effects profile, where compared with the conventional antipsychotic group, notably on aspects such as EPS, higher efficacy in the treatment of negative symptoms and raise hopes in coping with an alleged cognitive deficit related with the psychotic disorder. Yet the first enthusiasm with which clinicians encompassed the use of the “group” soon gave place to a certain skepticism. Side effects such as weight gain, diabetes and dyslipidemia, previously neglected in clinical practice and absent in clinical literature started to concern clinicians in relation with the use of the “new” drugs.

The new field of concern about the so called “metabolic” side effects of the new antipsychotic drugs, sometimes referred under the label “metabolic syndrome” becomes more obscure by several questions which still remaining open. First, there is preliminary evidence that such side effects do not apply to the same degree to the “second generation antipsychotics” as a group but there are considerable within the group differences. Second, the relation to the conventional antipsychotics with metabolic side effects is characterized by a striking lack of relevant literature and research. Third, the psychotic procedure and direct metabolic consequences have never been answered in a satisfactory way.

Even the relatively newly introduced concept of the “metabolic syndrome” has recently been under scientific scrutiny. It represents a real syndrome per se, or a mere cluster of individual risk factors and finally a “construction”? On the other hand relevant studies give good evidence that a large percentage of psychiatrists in their everyday practice refrain from a more detailed examination of the general medical condition of their patients. Perhaps such an attitude is rooted in a long standing mentality of psychiatrists that “medical problems” are concerns and should be referred to general physicians.

The vicious circle raising from such attitudes, given the fact that psychotic patients for reasons directly related with their illness, have less access and obtain less medical attention than the general population, led several scientific associations to propose recommendations addressing the psychiatric community. Such recommendations refer mainly to the long term side effects of the “new” antipsychotic drugs in the hope that such alert will lead to a more comprehensive monitoring of the psychotic population.

S36

The fear and anger model of mood, behavior and personality

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Current formal psychiatric approaches to nosology are plagued by an unwieldy degree of heterogeneity with insufficient appreciation of the commonalities of emotional, personality, behavioral, and addictive disorders. This challenge is addressed by building a spectrum model that integrates the advantages of Cloninger’s and Akiskal’s approaches to personality and temperament while avoiding some of their limitations. We specifically propose that “fear” and “anger” traits – used in a broader connotation than in the conventional literature, including drive and desire – provide an optimum basis for understanding how the spectra of anxiety, depressive, bipolar, ADHD, alcohol, substance use and other impulse-control, as well as cluster B and C personality disorders arise and relate to one another. By erecting a bidimensional approach, the paradox that apparently polar conditions (e.g. depression and mania, compulsivity and impulsivity, internalizing and externalizing disorders) can coexist without cancelling one another can be resolved. The combination of excessive or deficient fear and anger traits produces 4 main quadrants corresponding to the main temperament types of hyperthymic, depressive, cyclothymic and labile individuals, which roughly correspond to bipolar I, unipolar depression, bipolar II and ADHD, respectively. Other affective temperaments resulting from excess or deficiency of only fear or anger include irritable, anxious, apathetic and disinhibited/hyperactive. Our model does not consider schizophrenia and autism. We propose that “healthy” or euthymic individuals would have average or moderate fear and anger traits (“anger” most expressed as drive rather than anger itself). We further propose that family history, course and comorbidity patterns can also be understood based on fear and anger traits. This model has implications for clinical diagnosis of the common psychiatric disorders, and for subtyping depression and anxiety as well as cognitive and behavioral styles. Pharmacological treatments with antidepressants and anxiolytics can be considered as essentially restraint on fear, whereas lithium would attenuate fear deficiency. Dopaminergic antidepressants and psychostimulants are anger/drive enhancers and antipsychotics and mood stabilizers, such as divalproate and carbamazepine, may share antianger effects. Drugs effective for manic and depressive phases probably have both antianger and antifear effects. Non-pharmacological treatments would also mediate their effects by acting on fear and anger/drive. The preliminary data testing this model will be shown and discussed.

S37**Perspectives on interferon-induced depression: toward an integration of psychiatry, neuroscience and immunology**

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Cytokines are small protein molecules which play a key role in viral clearance. Interferon-alpha (IFN) is a proinflammatory cytokine that is used to treat hepatitis C. However, the use of IFN can result in the development of neuropsychiatric side effects and sickness behavior, such as depression, irritability and fatigue. IFN-induced depression occurs in approximately 20-30% of patients with HCV, yet the mechanisms and risk factors associated with this complication of its use are not well understood.

In patients chronically infected with the hepatitis C virus (HCV) and/or the human immunodeficiency virus (HIV) there is a high prevalence of substance use and psychiatric disorders. Although, IFN-based therapies are the current treatment for patients with HCV, many patients with psychiatric or substance use disorders do not receive these therapies. Health care providers can be reluctant to treat these patients because of non-compliance concerns and neuropsychiatric side effects of IFN therapy, particularly depression. Increasingly, basic scientists, hepatologists, mental health and other health care providers have recognized the need for improved treatment strategies for HCV, one that addresses the co-entwined epidemics of chronic infection, substance abuse and psychiatric illness.

In general, IFN-induced depression worsens with increasing dose and duration of therapy. However, there are no established premorbid risk factors (e.g., the patient's past history, pre-therapy physical or psychiatric condition) that reliably predict the development of IFN-induced depression. Clinical experience and neurochemical and genetic research suggest underlying causes for the neuropsychiatric side effects induced by IFN and also suggest approaches to ameliorating those side effects. Antiviral therapy for patients with HCV is best provided through integrating medical, psychiatric, and substance abuse care. Establishing care pathways, group education, and standardized screenings greatly enhances this approach.

Although there are gaps in our understanding of the optimal HCV treatment in patients with comorbid psychiatric and substance use disorders, in the future we must continue to expand our definition of HCV care to include these patients so that new management strategies and novel interventions can be developed and thus improve treatment outcomes for this underserved patient population.

S38**Brain-Immune Interactions: the role of cytokines in depression and substance use disorders**

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The role of the immune system in the neurobiological and pathophysiological mechanisms mediating psychiatric sympto-

motology and cognitive functioning has attracted increasing attention in recent years. This role is exemplified in the case of patients with chronic viral infections secondary to substance use disorders and in the use of cytokines as antiviral therapies [e.g., interferon-alpha therapy for hepatitis C viral (HCV) infection]. In particular, the recent methamphetamine epidemic in the United States has highlighted the risk of contracting human immunodeficiency viral (HIV) and HCV infections. Not only do substance use disorders increase the risk of contracting HIV or HCV, they have also been associated with decreased antiviral therapy utilization and virological suppression.

Cytokines are involved in signaling that activates the central nervous system in brain region-specific and cell type-specific ways. Emerging pre-clinical and clinical evidence show that cytokines can interact with different neurotransmitter and neuroendocrine systems resulting in cognitive dysfunction (e.g., deficits in memory, attention, vigilance and learning efficiency) and mood disturbances (e.g., depression, anxiety, and irritability). There are several key questions to address in understanding communication between the immune system and the brain. For example, how does the central nervous system recognize the degree of immune activation taking place in the periphery and when and how do these immune responses become pathologic, as in the case of interferon-induced depression or in HIV-related neurocognitive impairments.

Antidepressants are commonly prescribed for interferon-induced depression; however, these medications lack efficacy in treating a number of the common side effects associated with antiviral therapy, such as fatigue, irritability and loss of concentration. Other potential treatment strategies for these symptoms could include targeting key components of the signaling pathways that underlie the production or action of cytokines.

The goal of this presentation is to integrate current research findings in the fields of immunology, neuroscience and psychiatry to improve care for patients with substance use disorders and comorbid HIV and/or HCV infections by identifying critical areas for future study and interdisciplinary collaborations.

S39**Neurocognitive effects of HCV, methamphetamine abuse, and HIV: multiple risks and mechanisms**

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HIV-infected individuals are at risk for a spectrum of neurocognitive disorders. Research performed in developed and resource-limited settings indicates that over half of HIV-infected individuals may have neurocognitive impairment of at least mild severity. An important issue complicating the pathogenesis of these disorders is the co-existence of multiple neurotoxic conditions. Two important comorbidities are co-infection with Hepatitis C Virus (HCV) and use of stimulants, such as methamphetamine (MA).

The WHO estimates that 3% of the world's population has been infected with HCV, leaving 170 million chronically infected. HCV co-infects approximately a third of all HIV-infected individuals, 75-90% of HIV-infected intravenous drug users, and nearly 100% of some groups of HIV-infected hemophiliacs. The longer life

expectancy of HIV-infected individuals since the advent of combination antiretroviral therapy has highlighted the impact of chronic HCV, which has emerged as a frequent cause of death in HIV-infected people.

A growing body of literature fuels the notion that HCV can injure the brain. First, HCV can infect resident (e.g., astrocytes) and migrating (e.g., macrophages) cells of the central nervous system (CNS). Second, HCV can adapt to neural cells, as evidenced by phylogenetic compartmentalization. Third, the neuropsychological (NP) performance of HCV-infected individuals is more likely to be impaired than that of uninfected individuals. Fourth, magnetic resonance spectroscopy demonstrates that HCV-infected individuals have elevated choline-to-creatine ratios in the basal ganglia and white matter, suggesting inflammation, and reduced N-acetyl aspartate in white matter, suggesting neuronal loss.

Chronic or heavy exposure to MA has also been associated with brain injury. MA may injure the brain by multiple mechanisms including interfering with dopamine metabolism, altering glutamate processing by astrocytes, increasing TNF-alpha expression, and worsening oxidative stress. In HIV-infected individuals, MA may also increase HIV replication.

These and other data support that each of these conditions can lead to brain injury and that their effects may be additive. The high prevalences of these conditions also highlight important public health concerns. For example, the substantial cognitive impairment in these populations may negatively affect their ability to manage complex medical therapy. As a result, their likelihood of recovery – and survival – may be greatly reduced.

S40

Functional neuroimaging in psychiatry: a critical appraisal

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Functional neuroimaging is performed with a family of kindred methods (Magnetoencephalography [MEG], Positron Emission Tomography [PET], Single Photon Emission Computed Tomography [SPECT], and functional Magnetic Resonance Imaging [fMRI]). The main purpose of all functional neuroimaging is to disclose the pattern of resting activity of the brain, or patterns of task - specific activation, defined either in terms of neuronal signaling, of local metabolic and local blood flow rates or in terms of local density of specific neurotransmitter receptors throughout the brain. Establishing such patterns is relevant to psychiatry in two ways: First in characterizing in resting activity profiles that may differentiate diagnostic categories and, second, in disclosing the cerebral circuitry necessary for particular affective and cognitive functions that may be compromised in particular psychiatric disorders. The ultimate aim in both cases is enhancement of diagnostic accuracy as well as enhancement and verification of the efficacy of various therapeutic approaches. In this presentation, the degree to which these aims have been achieved, the methods that have been proved most suitable for addressing particular clinical issues and the most likely future developments will be outlined using as

concrete examples neuroimaging data from several laboratories world wide.

S41

Discrete and continuous approach in the conceptualization of psychoses

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The diagnostic distinction of bipolar affective disorder and schizophrenia in current classification systems ICD-10 and DSM IV is based on Kraepelin's definition of "dementia praecox" and "manic-depressive psychosis". However, the validity of the diagnostic distinction is challenged by an accumulating amount of various independent findings. The authors review the similarities and distinctins between both disorders in a range from psychopathology to neuroimaging methods with an emphasis on genetic findings as a major source of evidence of an overlap between bipolar disorder and schizophrenia.

Both bipolar disorder and schizophrenia demonstrate several similar psychopathological and epidemiologic characteristics. Both disorders are strongly influenced by genetic factors, e.g., results of linkage studies show a partial overlap of susceptibility loci. Two relatively common chromosomal aberrations are associated with both bipolar disorder and schizophrenia. Association studies of candidate genes in either disorder identified several genes apparently involved in both disorders, such as NRG1, DISC1, and G72/G30. Emerging gene functions possibly involved in both schizophrenia and bipolar disorder include neurogenesis, synaptogenesis, myelination, and neurotransmission. Bipolar disorder and schizophrenia also demonstrate some similarities in neurotransmitter dysfunction and share some, but not all, pharmacological mechanisms. Cognitive impairment in schizophrenia is well established during acute episodes as well as during remission and is more obvious compared to bipolar disorder. Moreover, children who developed schizophrenia in adulthood are characterised by cognitive, social, emotional, and behavioral impairments, in contrast to an impairment of a lesser degree found in children who later developed bipolar disorder. Also, patients with schizophrenia have more extensive structural brain abnormalities than those with bipolar disorder.

S42

The effect of reproductive events on the course of bipolar disorder

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The purpose of this talk is to review the literature and our studies concerning impact of female reproductive cycle on the course of bipolar disorder. The literature concerning following topics is reviewed: the relation between menstrual cycle and mood fluctuations (the impact of puberty on the onset of the illness, the relation between specific menstrual cycle phase and specific mood episode, prevalence of premenstrual syndrome

among women with bipolar disorder); the impact of pregnancy and postpartum period on the course of bipolar disorder; and whether menopause is a risk factor for bipolar women or not. The data suggest that hormonal fluctuations are associated with increased risk of mood fluctuations and mood episodes in women with bipolar disorder.

S43 Comorbidity and treatment issues in juvenile bipolar disorder

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Juvenile bipolar disorder (BD) is reported to be more treatment-resistant than adult BD, and to show poorer outcome. Predictors of treatment non-response in early onset BD are not well defined. Many potential domains of variables may be considered. Age, gender and age at onset of BD can affect both clinical presentation and pattern of comorbidity, and both these issues may affect the pharmacological response. Some features, which in adult patients with BD are considered predictors of poor treatment response, such as severity, mixed states, psychotic symptoms, and co-morbid substance abuse are particularly frequent in youths, and they also may influence pharmacological response in children and adolescents as well. We explored this issue in a study, conducted in the last 3 years, aimed to explore the role of lifetime comorbid externalizing and internalizing disorders as possible predictors of treatment non-response, in bipolar children and adolescents with manic or mixed episodes. Non-responders had more frequently co-morbid conduct disorder and/or ADHD. Furthermore, they were globally more severe at baseline and required more frequent addition of antipsychotic medications than treatment-responder patients. Co-morbid anxiety disorders in our sample did not predict treatment resistance. Interestingly, anxiety disorders and CD were inversely related, with the number of anxiety disorders significantly lower in subjects without CD comorbidity. The use of antipsychotics was associated with treatment non-response, and it was probably related to the severity of the subjects who received these drugs (i.e. higher prevalence of impulsivity, psychomotor agitation, behavioral problems, psychotic symptoms). Different mechanisms can be involved in treatment-resistance of bipolar subjects with co-morbid externalizing disorders. BD plus externalizing disorders may represent a specific subtype, with earlier-onset and resistance to traditional anti-manic and mood stabilizing drugs. Poorer treatment response in BD with co-occurring externalizing disorders may be also accounted for by a more problematic compliance to treatment. Several co-morbidities with negative prognostic implications (i.e. substance abuse, antisocial behaviors), which are more frequent in bipolar patients with externalizing disorders, may further affect clinical course. Follow-up studies with larger samples of subjects with BD and/or externalizing disorders appropriately treated with different options are needed to address this important issue. Additional stimulant medication after adequate coverage with mood stabilizers might represent one rational approach to this group of refractory bipolar children.

S44 Stigma in patients with bipolar disorders

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Background: Bipolar Disorder is amongst the most common and disabling psychiatric conditions, with chronic course and significant burden of disease. Patients with Bipolar Disorders experience a significant amount of stigmatizing and discrimination because of their illness.

Material and methods: We have developed an Inventory of Stigmatizing Experiences. It is a questionnaire, which includes both a frequency and an intensity scale, and measures the prevalence and frequency of stigma experiences, with the underlying assumption being that the total score reflects the pervasiveness of stigma experienced across different life domains.

Results: Over 70 patients attending a specialized tertiary service for patients with Bipolar Disorders were screened with the Inventory of Stigmatizing Experiences. The results show that the experience of stigmatizing events and discrimination because of mental illness is very high and occurs almost universally. Some further analysis based on age, gender and diagnosis is given.

Conclusion: Stigmatizing experiences and discrimination is common in patients with Bipolar Disorders, and requires work towards reducing it.

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S45 Living with mental illness: quality or continuity of life

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According to the Australian Study of Low Prevalence Disorders [1], a great majority of people with chronic and severe mental illness such as schizophrenia have harsh and unfulfilling lives: 75% are single, 30% live alone, 35% have no contact with relatives, 75% have no friend and 85% are reliant on welfare benefits. In the year prior to the study, 16% of them had attempted suicide, 18% had been a victim of violence, 15% felt unsafe where they lived, 13% needed police or legal assistance and 10% had been arrested. Nevertheless, when asked about their quality of life 60% of these people reported that they were mostly satisfied with their current level of independence and 44% were mostly satisfied with their life as a whole in the past year.

This somewhat paradoxical finding points toward a limited applicability of the concept and measurement of quality of life in people living with chronic and severe mental illness. In an attempt to resolve this paradox, we have developed a novel concept of "continuity of life" and defined it as an individual's ability continue with activities, plans and hopes in spite of an

event or process such as chronic and severe mental illness. The concept has been accompanied by a new assessment instrument entitled the Continuity of Life Interview (COLI), which covers twelve domains including some that are typically missed by the quality of life measurements (e.g. access to material possessions and fulfilment of civic duties and responsibilities). The COLI assessment process focuses on the present state and future plans of the respondents, rather than on their past [2, 3].

The COLI was extensively evaluated in several studies spanning different types of patients, settings and cultures. Patients understood the concept and its domains well and often expressed the view that the COLI interview gave them the opportunity to discuss aspects of their mental illness that are often disregarded during the treatment process. The COLI proved to be a cross-culturally appropriate and reliable tool with kappa coefficients of 0.845 and 0.451 for inter-rater and test-retest reliability, respectively. Furthermore, it has proven to be a suitable alternative and/or complement to most currently used quality of life measures. The COLI is now available to all potentially interested users and we hope that this presentation will prompt further translation, evaluation and application of this novel instrument.

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S46

AMSP (Arzneimittelsicherheit in der Psychiatrie) as a model for a pharmacovigilance system for psychiatric inpatient populations

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The AMSP-Project (Arzneimittelsicherheit in der Psychiatrie) is a prospective multicenter program for continuous assessment of ADRs of marketed psychotropic drugs in psychiatric inpatients under naturalistic conditions of routine clinical treatment. It corresponds to a dynamic cohort study meaning the cohort - the patient population of the participating clinics - is changing over time. Currently 60 hospitals in Germany, Switzerland, Austria, Belgium and Hungary are participating in the AMSP project, monitoring about 30,000 inpatients per year. Severe ADRs are detected by active and regular screening of all participating wards by local drug-monitors. They are documented and analysed in a standardised manner, to allow easy data collection and retrieval for more in depth analyses. Causality assessments include time correlations, alternative causes, underlying diseases, spontaneous events and knowledge about the same type of ADR. Each severe ADR case, and the association between ADR and pharmacological treatment, is discussed during pharmacovigilance conferences, held several times per year.

To estimate the incidence of all assessed ADRs all prescriptions of the wards are assessed on two references per year. Use of psychotropic drugs has been changing drastically over the years emphasizing the need for continuous ADR assessment to detect resulting changing ADR patterns. Incidences for severe ADRs of 1.5% about have been found. The mean hospitalisation length of the surveyed psychiatric patient population is compared to that of the serious ADR cases. The length of hospitalisation for serious ADR cases showed to be more than doubled.

The database exists now for 15 years and several studies have been undertaken using pharmacoepidemiological tools to assess cause and effect.

Besides being an efficient pharmacovigilance instrument, the AMSP-Project has turned out to be a valuable quality assurance instrument in as much as it seems to increase the awareness of participating physicians and other health providers of drug safety issues.

S47

Polypharmacy in psychiatric inpatients: Data from AMSP, a European pharmacovigilance system

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Introduction: Psychotropic polypharmacy is widely used in common practice although there is still a substantial deficit in established knowledge about combination and augmentation therapies. Psychiatric textbooks and international guidelines advise monotherapy wherever possible while reporting a higher risk of adverse drug reactions under polypharmacy.

Material and methods: The AMSP study is a drug safety program that ensures the continuous assessment of severe adverse drug reactions (ADR) in psychiatric inpatients under the natural conditions of routine clinical treatment. Furthermore on two reference days per hospital and per year, the following data are recorded for all patients on the wards under AMSP surveillance: all drugs applied on that day with the daily dosage for psychotropic drugs, ICD diagnosis, age, and sex. Data is stored at the study center in Munich. Due to the increasing number of participating clinics over the years only data of 33 hospitals (5 Austrian, 22 German and 6 Swiss institutions including university and non-university institutions) who participated since 2003 will be presented.

Results: Between 2003 and 2005 per year over 5000 inpatient-data were recorded (2003 N = 5993; 2004 N = 6979; 2005 N = 6400). We found a slight but steady decrease in the use of monotherapy since 2003. In detail, 2003 25.9% of the monitored inpatients were on a monotherapy with one psychotropic drug, decreasing to 24.70 % in 2004 and to 23.60% in 2005. Comparing prescriptions between the three countries, a common European trend to psychotropic polypharmacy in inpatient populations was found. Our data demonstrated that Austria had the lowest rate of monotherapy. The number of antidepressants or antipsychotics prescribed for inpatients remained stable or increased slightly over the

observed years. Although the mean number of antipsychotics prescribed per inpatient remained over the years stable at 1,43, antidepressants mean number raised from 1,21 in 2003 to 1,23 in 2005. The polypharmacy was primarily due to "multipsychopharmacy", the subscription of multiple classes of psychotropics. Details on type of drug combinations and their relative frequencies will be presented.

Conclusion: Although monotherapy is recommended by international experts, polypharmacy and especially multi-psychopharmacy is still gaining ground. Further studies should investigate the most commonly used combinations. Special focus should be put on studies, with the purpose to evaluate assumable positive results of some psychotropic combinations.

S48

Polypharmacy in bipolar disorder: does it make sense?

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Bipolar disorders represent an illness not easily treated by monotherapy. Approximately 2/3 of patients are not adequately responsive to lithium monotherapy and the great majority of patients require (and get) additional medication: additional mood stabilizers [1], antipsychotics [2], antidepressants, anti-manic and/or hypnotic substances [3, 4]. These traditional additional drugs are associated with potential problems. Antidepressants may precipitate mixed states or mania and/or cause cycle acceleration and rapid cycling. Conventional neuroleptics are associated with switching into depression, and clearly increase the individual risk of extrapyramidal symptoms, such as tardive dyskinesia. Polypharmacy is associated with the risk of unwanted pharmacological interactions: specific risks in antibipolar treatment are discussed.

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S49

Mild cognitive impairment: why bother?

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The existence of an intermediate zone between dementia and normal cognitive function has long been recognized. This

terminology has evolved from that of "benign senescent forgetfulness" proposed by Kral in 1962 to the more modern concept of mild cognitive impairment (MCI) defined by Petersen in 1999. In many cases, MCI will eventually lead to a more severe condition consistent with a diagnosis of dementia. However, some cases may remain stable or even improve. Efforts towards a better prediction of conversion to dementia have led to modified criteria for MCI and the creation of clinical sub-groups within this entity. Although pharmacological trials in MCI have generally been disappointing, recognition of this condition may be crucial for the early detection of dementing processes and rapid initiation of therapeutic interventions to slow down or arrest the progression of dementia.

S50

Predicting cognitive decline in Mild Cognitive Impairment

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Recent studies described several changes of endogenous event related potentials (ERP) and brain rhythm synchronization during memory activation in patients with Alzheimer's disease (AD). To examine whether memory-related EEG parameters may predict cognitive decline in mild cognitive impairment (MCI), we assessed P200 and N200 latencies as well as beta event-related synchronization (ERS) in 16 elderly controls (EC), 29 MCI cases and 10 patients with AD during the successful performance of a pure attentional detection task as compared to a highly working memory demanding 2-back task. At one year follow-up, sixteen MCI patients showed progressive cognitive decline (PMCI) and thirteen remained stable (SMCI). Both P200 and N200 latencies in the 2-back task were longer in PMCI and AD cases compared to EC and SMCI cases. During the interval 1000 ms to 1700 ms after stimulus, beta ERS at parietal electrodes was of lower amplitude in PMCI and AD compared to EC and SMCI cases. Univariate models showed that P200, N200 and log% beta values were significantly related to the SMCI/PMCI distinction with areas under the receiver operating characteristic curve of 0.93, 0.78 and 0.72, respectively. The combination of all three EEG hallmarks was the stronger predictor of MCI deterioration with 90% of correctly classified MCI cases. Our data reveal that PMCI and clinically overt AD share the same pattern of working memory-related EEG activation characterized by increased P200-N200 latencies and decreased beta ERS. They also show that P200 latency during the 2-back task may be a simple and promising EEG marker of rapid cognitive decline in MCI.

S51

Recognizing vascular dementia

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Knowledge and understanding of vascular dementia (VaD) has greatly evolved since its first descriptions in the 19th century.

Yet, recognizing VaD and differentiating it from Alzheimer's disease (AD) remains a diagnostic challenge. VaD should be suspected when dementia occurs abruptly, is associated with focal neurological signs and symptoms and follows a stepwise deteriorating course. However, over half of the cases may present with a more variable course. Certain neuropsychological patterns are more consistent with VaD than AD and can lend support to its diagnosis. Advances in neuroimaging have greatly improved our ability to identify cerebral vascular pathology; however, abnormal findings should be interpreted with care, taking into account lessons learned from clinicopathological studies. We have performed clinicopathological correlations in 208 individuals to evaluate five currently used clinical criteria for VaD. We have shown that they are not interchangeable. Although they are relatively specific, most suffer from low to very low sensitivity. A clear understanding of the different performance of currently available diagnostic strategies is crucial for the correct interpretation of epidemiological studies and therapeutic trials in VaD.

S52

Cognitive deficits in Alzheimer disease: a role for vascular function?

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The presence of microvascular changes has been documented both in brain aging and Alzheimer's disease (AD), although the relationship between the morphometry of brain capillaries and cognitive impairment is still unknown. We performed an analysis of capillary morphometric parameters and AD-related pathology in 19 elderly individuals with variable degrees of cognitive decline. Cognitive status was assessed prospectively using the Clinical Dementia Rating (CDR) scale. Total capillary lengths and numbers as well as mean length-weighted diameters, total NFT and neuron numbers and amyloid volume were estimated in entorhinal cortex and CA1 field. Total capillary numbers and mean diameters explained almost 40% of the neuron number variability in both the CA1 and entorhinal cortex. Total capillary length and numbers in the CA1 and entorhinal cortex did not predict cognitive status. Mean capillary diameters in the CA1 and entorhinal cortex were significantly related to CDR scores, explaining 18.5% and 31.1% of the cognitive variability, respectively. This relationship persisted after controlling for NFT and neuron numbers in multivariate regression models. Consistent with the growing interest about microvascular pathology in brain aging, the present data indicate that changes in capillary morphometric parameters may represent independent predictors of AD-related neuronal depletion and cognitive decline.

S53

Towards a new definition of mixed dementia

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Although microscopic cortical infarcts, thalamic and basal ganglia lacunes as well as periventricular and deep white matter

demyelination represent the main determinants of cognitive decline in pure vascular cases, their exact role in cases with substantial AD pathology remains unclear. To explore the pathological substrates of mixed dementia, we performed a detailed analysis of lacunar and microvascular pathology in 156 prospectively studied elderly individuals with various degrees of AD pathology. Cognitive status was assessed prospectively using the Clinical Dementia Rating (CDR) scale; neuropathological evaluation included Braak NFT and A β -protein deposition staging and bilateral semiquantitative assessment of microvascular ischemic pathology and lacunes; statistical analysis included univariate and multivariate regression models controlling for age. Four independent variables were significantly related to CDR scores. These included Braak NFT staging, A β deposition staging, cortical microinfarct as well as thalamic and basal ganglia lacune scores. The concomitant assessment of these neuropathological variables predicted 27% of the CDR variability. In contrast, white matter lacunes, periventricular and diffuse white matter demyelination as well as focal and diffuse cortical gliosis were not significantly related to CDR scores. In a stepwise approach, the vascular scores explained 15% of the variability of the presence of dementia, Braak NFT staging 30.4% and A β deposition staging 3.5%. These findings indicate that the clinical expression of the vascular component in mixed cases is highly dependent on lesion type and location as well as severity of concomitant AD-related pathology. In particular, they reveal that the progressive development of CMIs may have a stronger cognitive impact than white matter changes or lacunes visualized by structural neuroimaging in mixed dementia.

S54

Long-term course of bipolar I and II disorders: chronicity, dimensionality and relapse

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Studies of the longitudinal natural history of the long-term course of illness (up to 20 years) of patients with bipolar I (BP-I) and bipolar II (BP-II) have found that both disorders are highly chronic. BP-I patients were symptomatic from their illness only 47% of the weeks and BP-II patients were symptomatic 54% of the weeks. All levels of depressive and manic symptom severity ranging from the subsyndromal to syndromal level fluctuated frequently within the same bipolar patient over time, indicating that both BP-I and BP-II disorders are symptomatically expressed across time as dimensional illnesses. Minor and subsyndromal manic and depressive symptoms were 3 times more common than syndromal level symptoms of mania and major depression. Depressive symptoms were three times more common than manic during the course of BP-I patients, and BP-II is overwhelmingly a depressive illness in which depressive symptoms are over 30 times more common than symptoms in the manic spectrum. Examination of hypomanic episodes in BP-II revealed that hypomanias of short duration (2–6 days) compared to long duration (more than 6 days) are not clinically significantly different and appear to be part of the same disease process. Detailed analyses of psychosocial impairment during the course of bipolar illness show that affective symptom severity and psychosocial disability increase and decrease in

parallel. Depressive symptoms are equally disabling in BP-I and BP-II, often more disabling than manic/hypomanic symptoms. When asymptomatic, BP-I and BP-II patients' psychosocial function normalizes and no disability is present. Recovery from episodes in BP-I and BP-II with ongoing residual subsyndromal affective symptoms is associated with risk for very rapid relapse. Thus, all levels of affective symptom severity, including subsyndromal, are legitimate targets for therapeutic intervention to reduce risk of relapse and disability. The predominance of depressive symptoms indicates that more emphasis should be placed on the identification and management of depressive symptoms that present in patients with bipolar I and II disorders.

S55

Endophenotypes of psychosis

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There is growing appreciation that the major psychiatric disorders may be composed of sub-syndromes that can be characterized by specific pathophysiological markers. For example, schizophrenia can be deconstructed into several separable sub-syndromes - i.e., psychosis, negative symptoms, and mood instability. Notably, some or all of these sub-syndromes may develop in patients with other major psychiatric disorders, such as bipolar disorder. Each of the sub-syndromes of schizophrenia may be traced to disturbances in specific neurobiological systems. In recent studies of patients with schizophrenia and their non-psychotic siblings, we have identified specific abnormalities in the structure of the thalamus that are attributable to genetic factors, and correlated these abnormalities with losses of gray matter in particular regions of the cerebral cortex. In turn, we have shown that abnormal thalamic structure can underlie defective thalamo-cortical activation. Finally, we have associated abnormal activation of thalamo-cortical pathways with poor performance on tests of working memory and, in turn, with greater severity of negative symptoms. Thus, one can make the inference that negative symptoms in patients with schizophrenia can be traced to a series of disease-related structure-function relationships. Similar relationships may underlie psychosis and mood instability in both schizophrenia and bipolar disorder. Elucidation of these relationships may challenge our current psychiatric nosology, but may be helpful in our attempts to develop novel pharmacological treatments.

S56

Endophenotypes of depression and anxiety

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Progress in neurobiology (neurotransmitters, second messengers, early genes, trophic factors, ion channels, genetics, brain imaging) has changed the perspective on psychiatric illness in the last decades, particularly in the field of depression [1] and

anxiety [2]. Difficulties in the discovery of susceptibility genes have been attributed to the etiological heterogeneity of the clinical phenotype of the disease [3]. Endophenotypes [1, 2, 3, 4], e.g. neurobiological correlates of depression and anxiety which are genetically determined and mostly stable over time might be better targets for future research and/or treatment strategies. Practical implications of the neurobiology of depression and anxiety are discussed.

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S57

Integrating psychiatric nosology: from symptoms to syndromes

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Psychiatric disorders represent the most complicated expression of human behaviour. Psychiatric phenomenology has been described in details showing pivotal differences among various psychiatric syndromes. However, in daily practice, the same medications are used to treat different disorders. This fascination invites a challenge: a need to describe high level, complex behavioural impairments in terms of underlying neuroanatomy, neurophysiology and neurochemistry. The introduction and refinement of the advanced functional neuroimaging techniques has reinvigorated the exploration of the neuronal bases for normal behaviour and emotion. These developments, together with improvements in structural imaging and rapid advances in a number of neuroscientific fields, have played a major part, over the last few decades, in re-establishing the concept of the brain in psychiatry.

Current research re-evaluates models of mental illness in response to the apparently galloping progress of neuroscience. It seeks to assemble 'a conceptual framework for understanding the mechanisms by which mental symptoms are generated'. After all, only a tiny minority of the psychological processes that govern even normal, relatively automatic, behaviour have been mapped with the remotest degree of completeness or confidence. In reality, therefore, any current attempt to establish 'the neural basis of mental symptoms', by establishing theoretical expressions of hallucinations, delusions, thought disorder, anxiety, depression, and so forth, in terms that resonate with those of basic neuroscience will be welcomed.

This presentation reviews the literature of the common underlying mechanisms suggested to govern major psychiatric syndromes. The pure clinician is likely to find this effort odd, but it helps to establish or enlarge a knowledge base that

encourages forays away from purely clinical journals into the areas of basic science that are becoming increasingly relevant and, one thinks and wishes, indispensable, to the practice of psychiatry.

S58

Therapeutic considerations in the treatment of major psychiatric disorders

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The pharmacological treatment of major psychiatric disorders is based on antipsychotic medication (for schizophrenia and manic episodes of mood disorders) and on antidepressants (for the depressive episodes of mood disorders). The main pharmacotherapeutic considerations concern efficacy, side-effects and tolerability. These issues are related to pharmacodynamic and pharmacokinetic characteristics of the various medications such as the affinity to various receptors, selectivity to those which are most relevant in the pathophysiology of the disorders, and drug half life. These qualities are associated to the optimum daily dosing, dose regimen and the mode of escalation of the doses of each drug, as well as to its side-effect profile. These issues will be discussed for antipsychotics and antidepressants, in a practical manner, together with general issues in pharmacotherapy related to polypharmacy and combinations with other drug classes, whenever this is appropriate.

S59

Is Alzheimer's a preventable disease?

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The incidence of Alzheimer's disease (AD) in the developed countries increases with age, from about 1% in those aged 60–64 years to over 45% for those aged 95 years and over. With demographic ageing occurring rapidly in China, India and Latin America, it is likely that AD will become a major medical concern also in the developing countries. Some symptomatic treatments are available in the form of the cholinesterase inhibitors donepezil, galantamine and rivastigmine, as well as the NMDA receptor antagonist memantine. Current therapeutic targets include the enzymes involved in the formation or degradation of the amyloid or tau proteins responsible for the classical Alzheimer pathology of plaques and tangles. Therapeutic vaccines are also being developed to target aberrant proteins as soon as they appear in the ageing brain. AD may well be preventable in the future.

There is also substantial evidence that diet may play an important role in lowering the risk for developing AD. For example, there is a lower incidence of AD in societies which consume a Mediterranean diet of mainly fish, fruit, vegetables, olive oil and wine. In particular, there is widespread evidence from both population-based cohort and case control studies that regular consumption of moderate amounts of alcohol in the

form of wine reduces the risks of developing AD compared with abstainers and heavy drinkers. It also appears that age-related cognitive decline, particularly in women, is hampered in regular drinkers, and that older drinkers with diagnosable Mild Cognitive Impairment (MCI) progress less frequently to AD than their abstaining counterparts. Plausible biological mechanisms exist for the protective effects of wine, including antioxidant and inflammatory properties of the polyphenols present in wine, particularly in red varieties, which are extracted during fermentation.

S60

The 5HTTLPR s allele: a possible mediating variable between environmental factors and affective disorders

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Possibilities for research concerning the genetic background of psychiatric disorders and psychological traits has been vastly expanding in the last decade. Amongst several approaches, the 5HTTLPR, a functional polymorphism located in the promoter sequence of the serotonin transporter gene is a likely candidate in delineating genetic factors in the background of affective disorders. The 5HTTLPR polymorphism of the serotonin transporter gene has been found to be associated with both clinical and subclinical forms of depression and anxiety, as well as traits related to neuroticism and affective temperaments carrying a depressive component. Other studies have described its association with biological markers of depression in healthy samples. The s allele has also been described to be associated with resilience and response to stress. Results thus so far indicate that this polymorphism plays a crucial role in the background of affective disorders, while within the boundary of health it is manifested in the form of increased neuroticism or more marked emergence of neuroticism-related traits and in the more pronounced presence of dominant affective temperaments. Although the frequency of the s allele of this polymorphism, which is associated with increased vulnerability towards affective disorders, has been found to be 43% within the Caucasian population, the lifetime prevalence of unipolar and bipolar depression is around 18–20%. Thus it seems likely that although the presence of this allele predisposes to the development of affective disorders, other factors, such as environmental stress and life events are also necessary for the development of clinical depression. The nature of the manifested affective disorder is also determined by the interaction of environmental and genetic factors (gene x environment interaction) as well as the interaction of several genes (gene x gene interaction). Although complex interactions play a governing role in the manifestation of affective symptomatology, the presence of the 5HTTLPR s allele seems to increase vulnerability to environmental influences and stress and thus

plays a crucial and permissive role in the development of clinical depression.

S61

The real impact of affective temperaments: new perspectives from Argentina

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Background: We have examined the prevalence of affective temperaments between clinically unaffected relatives of bipolar patients and investigated the impact of these “subaffective” forms on their quality of life (QoL) in seven sites across Argentina.

Material and methods: We administered the scales TEMPS-A Buenos Aires [1] and Quality of Life Index-Spanish version, to a sample of non-ill first degree relatives of bipolar disorder patients (“cases”) and controls without family history of affective illness.

Results: Mean scores on all TEMPS-A subscales were significantly higher in cases, except for hyperthymia. The prevalence of affective temperaments, according to Argentinean cut-off points [2], was also higher, with statistical significance for cyclothymic and anxious temperaments. Regarding QoL, we have found an affectation of QoL domains for all temperaments, except hyperthymia. Both findings support the concept of a spectrum of subthreshold affective traits or temperaments in bipolar pedigrees [3].

Discussion: Our study confirms that healthy relatives of bipolar probands exhibit a higher degree of temperamental dysregulation than normal controls and demonstrates that affective temperaments can serve as an endophenotype for bipolar disorder [4] as judged by the fact that “clinically well” relatives show these traits at a statistically significantly higher than appropriately chosen controls.

In this study we go beyond these considerations to test the hypothesis that the “well relatives” of bipolar probands not only exhibit such traits, but could also show some impairment as a result of a temperamental foundation. Our results support the idea that predominant temperaments have a direct impact on their quality of life (QoL).

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S62

In search of Aristotle: temperament, human nature, melancholia, creativity and eminence

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The roots of the bipolar spectrum go back to ancient Greek medicine linking temperaments to melancholia, fear to melancholia, and melancholia to mania. The subject was taken up by French alienists in the mid nineteenth century and then given international status by German psychiatrists. DSM-II had a broad concept of manic-depressive illness. DSM-III (and ICD-10) introduced the broad concept of (major) depression, which undermined the continuum concept between depressive, anxiety, and bipolar disorders. Now that comorbidity is fashionable in both clinical and epidemiological studies, and subthreshold psychiatry is being taken seriously, a great deal has been published internationally to convincingly argue for the necessity of returning to the concept of a dimensional extension from bipolar temperaments through recurrent depression, “soft bipolar spectrum”, all the way to the “hard spectrum” and psychotic edge of the spectrum. Despite opinions to the contrary, extensive epidemiologic, course, clinical, and familial-genetic evidence supports the concept of a broad spectrum of affective illness. There may even be some intersection of the affective and schizophrenic spectra. This perspective is also compatible with distinct categorical subtypes within the broad spectrum, because prognostic and therapeutic implications are relevant for clinical practice involving distinct subtypes. The main critiques come from those who live in the “unipolar” world, and the fields of addictive and “borderline” psychiatry with accusations of “nosological imperialism” on the part of those who subscribe to the broad bipolar view. Finally, treatments have been developed largely for the classical, well-defined hard spectrum conditions. Preventive psychiatry, including that of suicide, is an important driving force to address these therapeutic challenges.

S63

Treating early and treating well: the importance of restoring global functioning for the brains of schizophrenia patients

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Brain imaging studies have consistently demonstrated brain abnormalities in patients with schizophrenia. These changes are largely confined to decreases in gray matter volumes and enlargement of the lateral and third ventricles. To date schizophrenia has been considered to result from abnormalities in neurodevelopment, with brain changes to be static. However, schizophrenia has long been thought to be a progressive or a degenerative, not a developmental, disorder. Indeed, Kraepelin considered the progressive clinical deterioration to be the hallmark of the disorder, naming it dementia praecox to reflect

this particular aspect. Lately, others have re-emphasised the importance of the decline in functioning in schizophrenia as a clue to its pathogenesis, suggesting that the brain abnormalities in schizophrenia could be expected to reflect this clinical progression. Indeed, we and others [1, 2] have reported brain abnormalities to increase over time in schizophrenia. Interestingly, not all patients show changes in brain volumes over time: we demonstrated that the changes are particularly pronounced in those patients with a poor prognosis in the first years of illness. Moreover progressive changes are most pronounced in the frontal and temporal areas as postulated by Kraepelin over a hundred years ago. Interestingly, white matter did not change over time. Finally, the progression in these frontal brain changes appeared to be attenuated by treatment with atypical, but not by typical antipsychotics. Thus, not only are brain changes progressive in schizophrenia, they are clinically relevant since they are related to outcome and may be reversed by some of the atypical antipsychotics. With the evidence pointing to a link between progressive disease and patient outcomes, questions such as whether these changes can be reversed with early pharmacological intervention and whether there is a point at which the brain changes become irreversible, become pertinent.

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S64

Reviewing the psychotic spectrum approach: a continuum or separate diseases?

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Since Kraepelin distinguished dementia praecox from manic-depressive illness, the generally accepted opinion among psychiatrists is that there are two distinct major psychotic illnesses, characterized by both psychodynamic and biological differences, responding to different treatments and with a very different prognosis. However the 'unitary psychosis' theory has never been completely abandoned. The recent advances in the understanding of these two disorders revived the century-old debate. Clinical data seem to favour the presence of a continuum with schizoaffective syndromes in the middle rather than the existence of two distinct diseases. The recognition of residual symptoms and a neurocognitive deficit in bipolar patients brings them even closer. The treatment has never before been more similar and both disorders demand the use of combination therapy of almost all available psychotropic agents in order to achieve the best possible outcome. However important differences also emerged. Patients with schizophrenia tend to manifest neurocognitive deficits and decline in functioning early since adolescence while bipolar patients

manifest a higher than average functioning during the same age periods. The neurocognitive deficit is rather different although the clinical picture shares common features, key clinical elements differ. Genetic and other biological data are mixed but rather point to a syndromal rather than a trait and disease specific dysfunction. Conclusively, data suggest the presence of two distinct poles but it is uncertain what the interpretation for the in-between cases and states should be.

S65

Pharmacotherapy in mania and depression

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Bipolar disorders are characterised by an irregular, partially chaotic pattern of mood swings and, most difficult to treat, mixed states where both symptoms of mania and depression are concurrently present. Thus, individualised treatments, quickly adapting to the prevailing symptomatology, becomes necessary. There is a clear indication for mood stabilisers thus as lithium, valproate, carbamazepine or lamotrigine to improve the long-term course of the illness; however, short-term interventions are often necessary tailored to specific symptoms without provoking other symptoms or worsening the long-term outcome. The use and usefulness of antidepressants in bipolar disorder still remains a matter of ongoing controversy. Concerning efficacy, a metaanalysis [1] and a recent systematic review [2] supports the use of some antidepressants in treating acute bipolar depression. However, recent data of the STEP-BD program also question their true clinical effectiveness [3]. On the manic side, conventional antipsychotics are effective [4], but their tolerability is often poor. With their superior tolerability profile atypical antipsychotics appear to be useful tools in such a symptom orientated treatment. Besides antimanic properties, several atypical antipsychotics have shown efficacy in mixed mania [5], psychotic mania [6] and, especially quetiapine and olanzapine, bipolar depression [7]. In addition, they may be useful in stabilising frequently cycling patients [8, 9]. In addition, there is increasing evidence for prophylactic efficacy of atypical antipsychotics against break-through mania (aripiprazole [10], risperidone (unpublished)) and both new manic and depressed episodes (olanzapine [11], quetiapine (unpublished)). Thus, atypical antipsychotics may emerge as a true alternative to standard treatment with mood stabilizers in combination with antimanic or antidepressant agents.

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S66

Quality of life of bipolar patients

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Several studies have examined QoL in patients with major depressive disorder (MDD), and few studies have evaluated the impact of bipolar disorder on health-related quality of life. Namjoshi and colleagues assessed all relevant English-language articles published prior to 1999, identifying 10 studies for inclusion: quite heterogeneous; a variety of generic and depression-specific instruments to assess different aspects of HRQOL; rarely included descriptions of the psychometric properties of the instruments; small samples. Second review (Dean et al. 2004) examined studies that had assessed HRQOL, work-impairment or healthcare costs and utilization in BDP published prior to November 2002; Using a broad definition of HRQOL (e.g studies that had assessed social or physical functioning in isolation) identified 65 HRQOL articles. The described deficits in HRQOL in patients with BD were similar to those observed in patients with unipolar depression and equal or lower than levels of HRQOL observed in patients with other chronic medical conditions. Another comprehensive literature search in several databases up to November 2004 (e.g. MEDLINE, EMBASE, PubMed, PsychINFO, Cochrane Database) was performed by Michalak Erin E, et al., 2005. Several studies addressed the question how significant the QoL in patients with BD is related with the different stages of the disorder. They conclude that: BD type II reported significantly poorer HRQOL than BD type I in the areas of social functioning and mental

health; women numerically lower scores in all of the questionnaire's domains except for mental health; the number of past episodes of depression was a stronger determinant of HRQOL than number of previous manic episodes; mania/hypomania patients significantly lower SF-12 mental health scores than euthymic patients? depressed or mixed patients significantly poorer HRQOL; depressed or experiencing a recent episode of depression; SF-36 scores remarkably low in the role-physical, vitality, social functioning, role-emotional and mental health sub-scales.

In our department using as instrument of measure the WHOQOL - brief, validated for the Portuguese population and the Brief Symptom Inventory in a sample of 53 Bipolar euthymic patients and a matched control sample of 53 subjects of the general population we found a good internal consistency in the domains of: physical well being, psychological quality of Life, social relationships and environmental QL; a significant discrimination between the two samples. The poor QL of Bipolar patients was correlated with sub-clinic symptomatology, mainly in depression and anxiety symptoms.

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S67

Schizophrenia and Bipolar illness: can imaging answer the dichotomy or spectrum question?

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Background: Both schizophrenia and bipolar illness are associated with a continuous spectrum of illness. In schizophrenia patients range from the chronically hospitalized to the employed and independent. Genetic studies of adopted twins and families have supported the concept of a range of severity appearing in the relatives of the severely ill. Similarly in the bipolar spectrum, individuals range from the severely agitated to the mildly activated. Mood variation and disordered thought may appear in both groups. Factor-analytic approaches applied to symptoms have not clearly supported a two-group dichotomy.

Material and methods: We examined cortical gray and white matter volumes in a large sample including unmedicated schizophrenia-spectrum patients (n = 79 SPD, n = 57 schizophrenia) and healthy controls (n = 148). For the bipolar spectrum we had 40 patients with bipolar spectrum (BPS) illnesses (bipolar type I = 17, bipolar type II = 7, cyclothymia = 16) and 36 sex- and age-matched control subjects.

Results: Within the schizophrenia spectrum, schizophrenia patients had reduced gray matter volume widely across the cortex but more marked in frontal and temporal lobes. The SPD patients had reductions in the same regions but only about half

that observed in schizophrenia and sparing was in key regions including BA10, superior and middle temporal gyrus. The BPS patients had significantly reduced volume of the white and the gray matter of the frontal cortex, findings also appearing in the schizophrenia spectrum.

Discussion: Taken together, the anatomical imaging findings are indicative of significant brain size differences with psychosis but do not strongly support the distinctiveness of either illness from their respective spectra or from each other. This may reflect imperfections in symptom-based diagnosis, multidimensional illnesses, or the non-specificity of brain volume decreases in psychiatric illness. Variation in the loss of Brodmann area 10 or lack of change in Brodmann area 22 may provide clues to dimensions related to severity of spectrum expression. Diffusion tensor imaging may provide additional dimensional answers to this diagnostic conundrum.

S68

Genes do not read DSM-IV: implications for psychosis classification

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Recent advances in molecular psychiatric genetics have at last identified susceptibility loci for the major psychotic disorders. Not surprisingly several of these genes appear to confer risk not only for schizophrenia but also for schizoaffective, bipolar affective disorder or for “mixed” psychotic phenotypes suggesting an overlap in genetic susceptibility across the traditional Kraepelinian dichotomy. Molecular genetics may catalyze a reappraisal of psychiatric nosology and classification as they challenge the traditionally held notion of distinct psychiatric entities with independent etiology and pathogenesis between the affective and non affective psychoses. Since genes code for proteins that have implications for neuronal micro-circuitry, and do not directly inflict illness per se, further research should consider deconstructing the broader psychosis phenotype, into measurable components that might be more susceptible to genetic influences than traditionally held DSM-IV Kraepelinian dichotomous constructs. We will review the latest evidence for this assertion and present data from the ongoing ASPIS study in which we identified discrete endophenotypes that might be more sensitive to the variability of the recently identified susceptibility genes for psychosis.

S69

The treatment of schizophrenia – the state of the evidence

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There is a constantly growing body of evidence concerning the pharmacological treatment of schizophrenia. For example, the register of controlled trials of the Cochrane Schizophrenia Group currently contains more than 8000 publications. In this context the lecture will present the current state of the art of

the pharmacological treatment of schizophrenia, but using a step by step algorithm from the choice of drug for the acutely patient to effective maintenance treatment for relapse prevention. The following points will be covered: choice of drug, typical versus atypical antipsychotics, which atypical antipsychotic, strategies for agitated patients, negative symptoms, depression, duration of an antipsychotic drug trial, strategies after initial non-response, clozapine, duration-, dose and choice of drug in maintenance treatment. Methodological issues in this competitive area will also be addressed.

S70

Therapeutic management of Bipolar Disorders

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The therapeutic goal in bipolar disorder is to restore and maintain mental health with few relapses. To date, the efficacy of many mood stabilizer drugs has been assessed in patients with bipolar disorder at different stage of their disease. Mood stabilizers are defined as any medication that stabilizes acute manic, mixed, and depressive symptoms and does not induce alternate mood symptoms, and prevents against future relapses into manic, mixed, or depressive symptoms or episodes. Mood stabilizers generally include lithium, antiepileptics, and atypical antipsychotics. However medication tolerability and adherence issues are often reasons why patients do not achieve favorable outcomes. As such, clinicians need to systematically assess and address all the barriers to therapy adherence, a major risk factor for bipolar disorder management failure. As with all drugs, many treatments are associated with undesirable side effects. Patients with bipolar disorders share with those with schizophrenia some adverse effects including an increased risk for excessive weight gain, diabetes, and dyslipidemia (metabolic syndrome). Monitoring of drug levels, lipids, blood glucose, metabolic parameters, and weight is essential toward achieving the desired efficacy and preserving quality of life. Patients need to be educated as to the frequency of these side effects. Moreover, the patient’s perceptions about the relative risks and benefits of treatment are a strong determinant of medication regimen adherence. The management of bipolar disorder requires a carefully planned strategic partnership between the patient, support systems, and all health care providers.

S71

Innovative drug treatment in depression

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Although there is no doubt about its efficiency, pharmacotherapy of depression still faces several problems that have to be focused upon and hopefully solved. Besides the problem of drug-resistant depression, over the last decade the view has become increasingly widespread that achieving remission is just as important as only response. Follow-up data show very clearly that non-remitters have a much higher risk of relapse/recurrence or even chronicity than remitters. The problems

of under-diagnosis and under-treatment of depression also need to be addressed.

As for the near future, there is great hope that new mechanisms of action can overcome the limitations of the traditional and current antidepressant medications. Unfortunately, some of the recent developments that raised the most interest either turned out to be less effective than hoped, such as the substance P antagonists, or did not yet lead to a drug likely to be marketed in the near future, such as CRF antagonists, for example. On the other hand the first melatonergic antidepressant, agomelatine, is a successful new development. Agomelatine is a melatonergic MT1 and MT2 receptor agonist with 5-HT_{2C} receptor antagonistic properties, and has shown antidepressant efficacy and favourable tolerability in several clinical trials on patients with major depression.

Drug development is evolving fast and is aided by improved brain imaging techniques, better animal models, and an increased knowledge of genetic markers. Hopefully this will result in a change in the pharmacotherapy of depression and psychiatric diseases in general, not on short term, but certainly in the next 50 years.

S72

Psychological aspects of the menopause

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A range of symptoms may impact women during the menopausal transition – several psychological symptoms (depressive mood, irritability, affective lability, lack of concentration) but also vasomotor symptoms like hot flushes, palpitations and sweating or somatic symptoms (sleep disorders, vaginal dryness often leading to pain during sexual intercourse, loss of energy, and joint and muscle pain). Loss of libido and other sexual problems may result and may also lead to depression. The impact of perimenopausal symptoms on the feeling of well-being and the quality of life of women depends not only on the frequency and severity of symptoms, but also on the individual attitude towards loss of fertility and aging. Cultural beliefs and the ability to cope with oncoming somatic and social changes are also important.

In terms of psychological symptoms, there seems to be an individual vulnerability: women with a history of mental problems are more likely to develop perimenopausal psychiatric symptoms. However, even prior mentally healthy women seem to have an increased risk of developing perimenopausal mental problems, as recent studies have shown. From small studies and especially from clinical experience, we know that hormonal replacement treatment (HRT) is able to reduce mild depression and other psychological symptoms. With the changing awareness of women regarding the dangers of HRT there may be an increasing number of women who seek alternative treatment. If antidepressant medication is considered, an agent should be chosen which also gives the chance to influence vasomotor and somatic symptoms. Because perimenopausal symptoms are typically multifactorial in nature, it is important to consider (as well as the biological mechanism and hormonal influences) coping strategies, individual living situation, and self-perception regarding health. The special needs of the individual woman,

therefore, need to be considered in order that treatment decisions are made in the sense of shared decision making.

S73

Neurodegeneration and neuroprotection in the epileptic brain

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It was back in the 19th century when pathologists observed hippocampal damage in autopsy studies of patients with epilepsy. In the 1970s it was demonstrated that status epilepticus can cause neuronal degeneration in experimental animal models of recurrent seizures. Currently known mechanisms that underlie epileptic brain injury include acute passive excitotoxic neuronal death as well as active cell death processes triggered by excessive glutamate in the extracellular space, oxidative stress or inflammatory mediators.

In the past decade increasing evidence has accumulated demonstrating that not only status epilepticus but also briefer episodes of recurring seizures may also cause neural degeneration and cognitive dysfunction. With the use of sensitive MR imaging methods, specifically MR volumetry, prospective longitudinal studies in patients are beginning to provide indications that recurring seizure injury in a subset of patients is associated with hippocampal volume loss in the absence of initial events. Seizure suppression and anticonvulsant treatment can prevent adverse structural and functional effects of seizures. Thus, seizure control with anticonvulsants and new medications with neuroprotective properties is desirable.

Recent findings on potentially damaging effects of antiepileptic drugs in the developing mammalian brain need to be taken into consideration when designing antiepileptic therapies for infants, young children and pregnant women.

S74

Neuroprotection in epilepsy: the role of antiepileptic drugs

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During the last 15 years, accumulating experimental and clinical evidence suggested that the epileptic brain may undergo significant modifications as a result of recurrent seizures or due to the underlying seizure etiology. This concept of epilepsy as an evolving neurodegenerative process is best exemplified by temporal lobe epilepsy. According to current thinking, in patients with temporal lobe epilepsy a triggering factor, such as complicated febrile seizures or head trauma, sets in motion the process of epileptogenesis, that is a cascade of events leading to a gradual increase of brain excitability and eventually the occurrence of spontaneous seizures. In a subset of patients, this process further evolves due to a complex interaction of neurodegenerative and neuroplastic changes brought about by recurrent seizures. At a clinical level, this evolving process

becomes evident by the onset of pharmacoresistant epileptic seizures sometimes accompanied by cognitive decline. The current pharmacological treatment of epilepsy is directed towards suppressing epileptic seizures and therefore it is essentially a symptomatic approach. The recent unraveling of the cellular mechanisms underlying epileptogenesis, however, has led to the discovery of pharmacological agents with neuroprotective and antiepileptogenic properties, which include a number of clinically available antiepileptic drugs. These agents hold promise as disease modification strategies which may ultimately improve the long-term outcome of epileptic patients by mitigating cognitive compromise and preventing the transition to pharmacoresistance. This presentation reviews the available evidence regarding the neuroprotective properties of antiepileptic drugs and discusses some methodological difficulties in designing clinical trials with a view to investigating neuroprotective strategies in epilepsy.

S75

Oxidative stress, mitochondrial dysfunction and Alzheimer's disease

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In general, oxidative stress is the overpowering of anti-oxidant defense system by oxidative system caused by overproduction of reactive oxygen species (ROS). At present, many lines of evidence from animal and human studies suggest that mitochondrial dysfunction is the main source of ROS that have a central role in pathogenesis of neurodegenerative diseases. Mitochondria are the only intracellular organelles that contain their own DNA (mitochondrial DNA; mtDNA) in multiple copies. Although most mitochondrial proteins are encoded by nuclear DNA, mtDNA encodes 13 polypeptide components of the respiratory chain that is located in mitochondrial inner membrane. Biochemical, ultrastructural and genetic studies confirmed the mitochondrial dysfunction/oxidative stress in patients with Alzheimer's disease. Moreover, it has been shown that A β is present in mitochondria and through interaction with mitochondrial proteins promotes oxidative stress and apoptosis. In addition, γ -secretase complex (containing PS1) has been recently localized to mitochondria and shown to have the ability to actively cleave APP in the mitochondrial membrane. According to recent animal data oxidative stress is present at very early stage of disease prior to the appearance of A β plaques suggesting that oxidative stress is a primary rather a secondary event in AD pathogenesis and anti-oxidant therapies hold great promise.

S76

Nicotinic stimulation in two populations: aircraft pilots and dementia patients

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Our previous studies in a professional flight simulator have demonstrated a positive effect of nicotine on a complex

cognitive task, flying an aircraft. This effect may be mediated by working memory or attentional processes, in addition to direct effects on short-term and long-term memory. Similar data exist for galantamine's nicotinic effects in vivo and in vitro. In a similar manner to the effects of nicotine on aircraft pilots, galantamine's effects might lead to specific improvements attention, which is suggested by its having positive effects on severely affected Alzheimer's patients who memory function is virtually absent. Data also exist suggesting a neuroprotective effect of galantamine, however studies suggesting this effect have been limited to one year duration. Future studies of such compounds should focus on their effects on attention and neuroprotection longitudinally across all levels of Alzheimer's pathology.

S77

Are changes in the pharmacokinetic (PK) and pharmacodynamic (PD) properties of antipsychotics able to improve efficacy and safety?

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Although atypical antipsychotics have provided clinical advantages over conventional medications, data from trials such as CATIE [1] have highlighted that there is still a need for improved medications to support continued adherence and optimal clinical outcomes. In particular, it would be of benefit to minimize side effects such as extrapyramidal symptoms (EPS) and weight gain. One approach to optimize antipsychotic activity is to modulate the pharmacokinetic profile and thus deliver improved pharmacodynamic effects. Oral formulations of antipsychotics are generally characterized by a relatively rapid rise and fall in plasma concentrations with levels above and below threshold levels being associated with an increased risk of side effects and reduced antipsychotic efficacy, respectively [2]. Achieving steady plasma levels at which the drug achieves maximum symptom control but below levels at which adverse events occur therefore remains the ideal profile. For atypical antipsychotics, efficacy begins at approximately 60% occupancy of the D2 receptor, and occupancy above 80% can lead to EPS [2, 3, 4]. Approaches to reduce the peak-to-trough fluctuations compared with immediate-release oral agents include the use of long-acting injectable agents which have smoother plasma concentration-time profiles [2, 5]. For those patients who prefer oral agents, alongside the choice of agents such as olanzapine, quetiapine, ziprasidone and risperidone, there is the option of using paliperidone ER which uses oral osmotic pump (OROS) extended-release technology [6]. This provides a continual release of medication leading to minimal peaks and troughs in plasma concentrations over a 24-hour period. A sustained release formulation of quetiapine is also currently being assessed in clinical trials [7].

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S78

The bipolar spectrum: origins, validation and critique

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The roots of the bipolar spectrum go back to ancient Greek medicine linking temperaments to melancholia, fear to melancholia, and melancholia to mania. The subject was taken up by French alienists in the mid nineteenth century and then given international status by German psychiatrists. DSM-II had a broad concept of manic-depressive illness. DSM-III (and ICD-10) introduced the broad concept of (major) depression, which undermined the continuum concept between depressive, anxiety, and bipolar disorders. Now that comorbidity is fashionable in both clinical and epidemiological studies, and subthreshold psychiatry is being taken seriously, a great deal has been published internationally to convincingly argue for the necessity of returning to the concept of a dimensional extension from bipolar temperaments through recurrent depression, “soft bipolar spectrum”, all the way to the “hard spectrum” and psychotic edge of the spectrum. Despite opinions to the contrary, extensive epidemiologic, course, clinical, and familial-genetic evidence supports the concept of a broad spectrum of affective illness. There may even be some intersection of the affective and schizophrenic spectra. This perspective is also compatible with distinct categorical subtypes within the broad spectrum, because prognostic and therapeutic implications are relevant for clinical practice involving distinct subtypes. The main critiques come from those who live in the “unipolar” world, and the fields of addictive and “borderline” psychiatry with accusations of “nosological imperialism” on the part of those who subscribe to the broad bipolar view. Finally,

treatments have been developed largely for the classical, well-defined hard spectrum conditions. Preventive psychiatry, including that of suicide, is an important driving force to address these therapeutic challenges.

S79

The psychotic end of the spectrum

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There is no empty room between the two prototypes “schizophrenia” and “mood disorders”. Even the prototypes themselves are not monolithic, but constitute spectra of disorders, i. e. the bipolar, the depressive, and the schizophrenic spectrum. The boundaries between them are not an iron curtain but they are elastic and permeable. These spectra overlap on various levels: on the phenomenological, prognostic, sociodemographic, premorbid, genetic, biological, pharmacological and other levels. The overlap of the schizophrenic and mood spectra results in clinical conditions such as schizoaffective disorders, acute and transient psychotic disorders, mood disorders with mood-incongruent psychotic symptoms etc. Based on longitudinal clinical data on a) schizoaffective disorders, b) mood disorders with mood-incongruent symptoms, and c) acute and transient psychotic disorders, the overlap of the spectra or the psychotic continuum will be defined. The polymorphic long-term course of bipolar disorders and the differences and similarities between mood-dominated, schizoaffective-dominated and schizo-dominated types of course could support the argument that a distinction between the prototypes “mood disorder” and “schizophrenia” is not always possible, but that there is an overlap of affective and schizophrenic spectra and an “antagonistic influence” between them. Clinicians need to consider the polymorphism of the bipolar disorder in order to provide adequate treatment and prophylaxis. Researchers have to consider that the boundaries of diagnostic categories are very flexible, thus making possible a psychotic continuum.

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S80

Bipolar I – Bipolar II distinction

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Previous studies, performed in the second half of the last century, focused primarily on the two extreme manifestations of

major mood disorders (i.e., unipolar major depression and “classical” Bipolar I disorder), and found marked differences in almost all clinical features and diagnostic validators, virtually supporting the strict categorical distinction between unipolar major depressive disorder and bipolar disorder. However, a number of recent studies clearly support the original “unitary” concept of Emil Kraepelin on the continuity between unipolar depression and (bipolar) manic-depressive illness. Nowadays it is well accepted that Bipolar I (depression with a history of mania) and Bipolar II (depression with a history of hypomania but not with mania) disorders represent two prominent clinical phenotypes at the “bipolar edge” of the full unipolar-bipolar spectrum with several similarities and differences. Phenomenologically, Bipolar II disorder is more close to Bipolar I disorder than to unipolar depression.

The clinically most important differences between Bipolar I and Bipolar II disorders are: 1/Epidemiology, including gender ratio and age of onset, 2/Genetical (biological) background, 3/Cross-sectional clinical picture of depression, including mixed depression/agitation and psychotic features, 4/Psychiatric and medical comorbidity, 5/Long-term course and outcome, including rapid cycling and seasonality, 6/Suicidal behaviour, including both attempted and completed suicide, 7/Affective temperament, and 8/Artistic creativity/criminality.

S81

Taking into account the temperament factor: clinical and therapeutic implications

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Temperament, although an ancient concept, seems to go far beyond modern classification systems and utilizes a wealth of valuable information including personal and family history as well as ‘non-typical’ symptoms. Thus, it succeeds to define both the specific features of the individual mood episode as well as the long term outcome of the disease, and particularly the response to treatment and overall outcome. The assessment of the temperament is not typically utilized when the therapist designs the treatment strategy. The usual practice is to prescribe antidepressants for depressive episodes and antipsychotics for psychotic symptoms; specific antiepileptics and lithium can be used as mood stabilizers. According to this practice, the ‘classic’ clinical pictures are easier to recognize and to treat, and most agents preferably treat with higher rates of success specific clinical entities, for example lithium is more useful for bipolar patients with euphoric mania and antidepressants as monotherapy for unipolar melancholic depression. However, today, the majority of patients do not fall into these ‘classic’ categories and the assessment of the temperament can reveal a number of clues highly predicting response to a specific treatment as well as the manifestation of a number of problematic effects of pharmacotherapy like agitation, induction of mixed states, rapid cycling and suicidality and even weight gain. Moreover, the knowledge of the temperament can guide the design of the therapeutic strategy with informed and careful simultaneous use of multiple agents. This strategy among others should include some but not all second generation antipsychotics aiming not to

sedate, but to the fast acute treatment and prophylaxis from excessive hyperthymic or overt manic behaviours as well as suicide.

S82

Brain, mind and behaviour – emerging biological connections

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Connections of brain, mind and behavior have always been interesting exploration for scholars of the subject. We have lived through the era of ‘Brainless Mind’ and ‘Mindless Brain’ in explanation of normal and abnormal human behavior argued by every one from psychoanalysts to neurochemists.

The last twenty years have seen tremendous advancement in the field of neuroscience. Few important developments have been crucial to such developments e.g. 1. declaration of ‘Decade of Brain’ 1990 to year 2000 brought new focus, funding and collaborations in investigation of brain. 2. advancement in biomedical sciences and imaging for development of sophisticated tools, probes and machines to allow direct data accessibility such as in MRI or fMRI. 3. development of reliable system of clinical diagnosis and phenomenology, which brought uniformly in the language of psychiatry through classification systems, 4. informations from human Genome project, 5. Practice of evidence bases medicine, all these initiative have unfolded what was just a matter of speculation few decades back. The success was remarkable and year 2000 Noble prize was given to a team of three distinguished neuroscientists who attempted unfolding the ‘biochemical process of memory’. Cognition and memory provides the opportunity of interface of biology, psychology and behavioral medicine. Development of the field of Cognitive neuron science has been a grate achievement, which explains not only how information is repressed or stored through conditioning but also that the process can be experimentally supported by animal experiments. These emerging connections of brain to environment have a series of changes and each set of change is dedicated in a discipline of neuroscience. Now we have many models of normal behaviors, personality traits and pathological behaviour. the series involves a genetic component, a neuronal cell, few neurotransmitter substances, and neuroanatomical locations, defining the development of pathology in a longitudinal model. More and more research in providing more valid and evidence based information for newer frontiers of human life e.g. antenatal and neonatal learning, Cognitive enhancement, spectrum of mood, biology of consciousness and the ‘unconsciousness’.

The brain, mind and behavior, which appeared so disconnected few decades back are now units of continuous process for information processing and retrieval. Advancements in Conditioning and organization theories, neuronal plasticity, and phenotypes of genetic propensities are few aspects, which will explain complex human emotion and pathology to bring relief to millions who are suffering from pathology of brain mind and behavior.

S83**Evidence from in vivo 31-phosphorus magnetic resonance spectroscopy phosphodiester that exhaled ethane is a biomarker of cerebral n-3 polyunsaturated fatty acid peroxidation in humans**

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This study tested the hypothesis that exhaled ethane is a biomarker of cerebral n-3 polyunsaturated fatty acid (PUFA) peroxidation in humans. Ethane is released specifically following peroxidation of n-3 PUFAs, probably via: abstraction of a hydrogen of the unsaturated carbon closest to the methyl end; isomerization to a diene radical; addition of oxygen to form a hydroperoxide; and β -scission to a hydroxyl and an alkoxy radical, the latter forming ethane by hydrogen addition. We reasoned that the cerebral source of ethane would be the docosahexaenoic acid component of membrane phospholipids. Breakdown of the latter also releases phosphorylated polar head groups, giving rise to glycerophosphorylcholine and glycerophosphorylethanolamine which can be measured from the 31-phosphorus neurospectroscopy phosphodiester peak. Schizophrenia patients were chosen because of evidence of increased free radical-mediated damage and cerebral lipid peroxidation in this disorder. Breath samples from eight patients were analyzed using mass spectrometry. Cerebral 31-phosphorus spectra were obtained from the same patients from 70 70 70 mm³ voxels using an image-selected in vivo spectroscopy pulse sequence. Ethane and percentage phosphodiester levels were positively correlated ($r_s = 0.714$, $p < 0.05$), thus supporting the hypothesis that the measurement of exhaled ethane levels indexes cerebral n-3 lipid peroxidation.

S84**The use of self-organizing maps to study fatty acids in neuropsychiatric disorders**

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In our study we have evaluated the theme of the platelet fatty acid composition in subjects with a clinical diagnosis of Major Depression (MD). We have investigated 84 subjects (51 females and 33 males, mean age: 60.21, SD: ± 12), compared with 60 control, apparently healthy subjects (38 Males and 22 Females, mean age: 33.97, SD: ± 12.40). The tools used for the diagnosis of Major Depression were: Clinical Global Impression (CGI), Symptoms Check List-90 (SCL-90), Medical and Pharmacological history, BMI, Structured Clinical Interview DSM-IV-SCID-IV (American Psychiatric Association 2000), Hamilton Rating Scale of Depression (HRSD).

We have analysed the groups without taking in account therapies, gender and age. The results obtained show the

evidence of three fatty acids, Arachidonic Acid (AA), Linoleic Acid (LA), and Palmitic Acid (PA) in a peculiar position with respect to the biochemical characterization of MD. The ratio among the three fatty acids, in the different conditions studied, allows us to do the hypothesis that the MD is linked to a possible un-balance of the membrane function. The depressive condition, according to the fatty acid composition, is characterized by a progressive increase of the degree of un-saturation of the platelet fatty acids in most of the patients, while a consistent group is characterized by an increase of the degree of saturation. These findings in platelets seem to be more specific indicators with respect to the red blood cell fatty acids and plasma phospholipid fatty acids.

In conclusion, from the study, we can assume:

- 1) AA, LA and PA are the three main lipid biochemical markers in platelets that characterize the MD.
- 2) The constant sum of the three fatty acids (AA+LA+PA = 53.33 ± 3.43) in all the conditions studied other than the depressive and normal people, gives reason of the role that they play in the membrane balance. In particular the coefficient of correlation between the sum of AA and LA versus PA was highly significant: $r = -.66$ ($p = 0.00$)
- 3) The differences of the degrees of un-saturation and of saturation in the platelets of the subjects could be a signal of a different condition within the same pathology. The use of the Artificial Neural Network (ANN) to analyse the modifications of the fatty acids allows us to confirm, from a biochemical point of view, the clinical diagnosis of MD.
- 4) It is possible that the blood platelets fatty acids (AA, LA, PA) are strong specific markers also in other psychiatric conditions and that they are an easy way to forecast, at least the MD, possibly, other pathologies.

S85**Smoking and neuropsychiatric disorders: a comparison of oxidative stress in smokers compared with non-smokers**

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This study tested the hypothesis that oxidative stress is higher in smokers compared with age- and sex-matched non-smokers. We found no significant difference in exhaled ethane levels between these two groups. The reasons for this finding will be discussed and the implications in relation to smoking, fatty acids and neuropsychiatric disorders will be described.

S86**Fatty acids and oxidative stress**

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Fatty acids are an important constituent of cellular membranes. The membranes are able to synthesize them with acetyl-CoA

but are not capable of synthesizing essential fatty acids (linoleic acid and α -linoleic acid), which are the precursors to, respectively, arachidonic acid and docosahexaenoic acid.

The cellular membrane, with its high content of unsaturated fatty acids, plays a protective, anti-inflammatory role and indirectly an antioxidant role, favouring physiological defence processes against free radicals.

Oxidative stress is a condition which modifies the normal intracellular balance between oxidant substances produced during aerobic metabolism and antioxidant system processes which perform the function of neutralisation, putting a series of protective mechanisms, of both an enzymatic and non enzymatic nature, in action. Enzymatic systems include dismutase (SOD), catalase (CAT), and glutathione peroxidase (GSH-Px). In non-enzymatic systems, the most important molecules are glutathione, α -tocopherol (vitamin E), ascorbic acid (vitamin C), flavonoids, the phenol compounds and the minerals zinc (Zn), copper (Cu) and selenium (Sn).

Numerous physiological and pathological processes such as ageing, excessive diets, infections, inflammations, environmental toxins, pharmacological cures, emotional or psychological stress, radiation, smoke and alcohol increase the bodily concentration of oxidising substances, known as reactive oxygen species (ROS) or, more commonly, free radicals. These are chemical species which are highly reactive due to the presence of split electrons. An increase in free radicals compromises the delicate homeostatic mechanisms which involve neurotransmitters, hormones, oxidising substances and numerous other mediators.

Due to their structure, which is rich in double bonds, polyunsaturated fatty acids render cellular membranes vulnerable to damage from free radicals, causing peroxidation. The damage induced by lipid peroxidation renders the cell unstable, and therefore compromises fluidity, permeability, signal transduction and causes receptor, mitochondrial DNA and nuclear alterations.

Oxidising stress from free radicals is one of the factors which contributes to an increase in the frequency of the cellular cycle and consequent premature cell death, leading to many degenerative illnesses in the central nervous system, as well as psychiatric disturbances. Peripheral systems undergo a process of atherogenesis and can lead to pathologies in the cardiovascular system.

This data is important for recognising that the integrity and functionality of biomolecules is closely correlated to integration with essential fatty acids and antioxidants, whether from a dietary-habit point of view or from a therapeutic point of view.

S87

Changes in the cerebral cortex in forensic schizophrenia patients: a magnetic resonance imaging study

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Following high-resolution magnetic resonance imaging, the results of a comparison of the structure of the brain, particularly the cerebral cortex, in forensic schizophrenia patients and age-

and sex-matched first-episode non-forensic schizophrenia patients will be detailed, and the implications of these findings described.

S88

Cerebral spectroscopic and oxidative stress studies in patients with schizophrenia who have dangerously violently offended

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Cerebral spectroscopy is a non-invasive technique that allows us to study the chemistry of the living brain, while exhaled breath analysis allows us to study oxidative stress. We shall present an overview of these techniques and review the findings of studies in which these techniques have been applied to patients with schizophrenia who have dangerously violently offended. The implications for the role of fatty acids in the aetiology and treatment of neuropsychiatric disorders generally will be discussed.

S89

Susceptibility genes for schizophrenia affect normal individuals

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In the largest study of its kind to date, we sought to examine the impact of several genes that have been previously associated with schizophrenia susceptibility, such as Catechol-O-methyltransferase (COMT), Neuregulin1 (NRG1), Dysbindin (DTNBP1), D-amino-acid oxidase activator (DAOA), D-amino-acid oxidase (DAAO) and the regulator of G-protein signaling 4 (RGS4), on a healthy population. We recruited more than 2000 young men and measured dimensions of their cognitive abilities and schizotypal personality traits. Healthy individuals who possessed the risk variants within the DTNBP1, NRG1, COMT, DAAO and RGS4 genes exhibited selective and small reductions in their cognitive performance and in general had higher schizotypy scores. Even at the general population level, the genetic liability to psychosis may be expressed as minute and 'undetected to the naked eye' alterations in brain information processing capacity and behavior.

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S90

Importance of the diagnosis of bipolar mixed states

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Mixed states are an affective condition in which manic and depressive symptoms are present at the same time. In the

original description by Kraepelin and Weygandt features of mania and depression did coexist in the psychopathological domains of mood, cognition and psychomotor activity. Due to the great influence of American psychiatric nosology, the DSM system, a lot of interest has been placed on manic variations of mixed states under dysphoric mania, with intrusion of full blown depressive symptoms into mania. We will focus on a neglect aspect of mixed states, its presence in depression, depressive mixed state, and its enormous importance in the clinical setting. Bipolar depressive mixed states are more chronic, more frequent, more serious, highly comorbid with psychiatric and medical conditions and generate increased suicidality. The presence of hypomanic features in depressed bipolar II patients is fairly common in any given psychiatric outpatient population. This could generate a very complex and ever changing clinical picture of affective instability, fluctuation, liability, irritability and diurnal variation that are mostly sustained over time. It is the great imitator of our era, like tuberculosis was for internal medicine during the first half of the last century. Differential diagnosis could be made with multiple psychiatric condition like unipolar agitated depression, schizophrenia, borderline personality disorder and also clinical states like delirium. The implications of mixed states recognition are of utmost clinical practice importance. The widespread use of massive and multiple antidepressant pharmacotherapy, do generate/worsen mixed states. It would be central to distinguish mixed states from other conditions avoiding treatments that do worsen symptomatology, e.g. antidepressants, and using others that might be effective, e.g. anticonvulsants, atypical antipsychotics and electroconvulsive therapy.

S91

Novelty detection and memory processes within the human hippocampus

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Intracranial recordings of cognitive potentials within the human hippocampal system have identified N400 potentials in the anterior medial temporal lobe (AMTL-N400), which are associated with successful encoding for declarative memory. In addition, their amplitudes to “new” but not “old” words in a verbal recognition task correlate both with verbal memory performance and with the neuronal density of the hippocampal CA1-region. Moreover, only AMTL-N400s to “new” but not those to “old” words can be reduced in amplitude by the NMDA-receptor blocker ketamine. Together, our findings indicate that successful encoding for declarative memory is mediated, at least in part, by NMDA-receptor dependent novelty detection within the human hippocampal system. However, the hippocampus proper is also known to participate in recall from episodic memory. Accordingly, only within the hippocampus proper do the neural responses to repeated words differ not only from those to new words but also from each other as a function of recognition success. By contrast parahippocampal (rhinal) responses are sensitive to repetition independent of conscious recognition. We take this finding to

suggest that the hippocampus proper is specifically engaged during conscious memory processes.

S92

Brain correlates of the embodied self: neurology and cognitive neuroscience

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Although most humans have never had any trouble localizing themselves within their own bodily borders, this sense of self location or embodiment is a fundamental aspect of self consciousness and requires specific brain mechanisms. Recent clinical and neuroimaging evidence suggests that multisensory integration of bodily and two.

Posterior brain regions, the temporo-parietal junction (TPJ) and cortex at/near the extrastriate body area (EBA) are crucial in coding embodiment.

In this seminar I will review three lines of research investigating brain correlates of embodiment. (1) Pathological states of embodiment (such as out-of-body experience and autoscopia) due to focal brain damage to temporo-parietal cortex and extrastriate cortex in neurological patients. (2) Recent findings on activations of the temporo-parietal cortex and extrastriate cortex in embodiment-related tasks using mental imagery in healthy subjects. (3) The experimental induction of disembodiment in healthy subjects using multisensory conflict and virtual reality.

I argue that these clinical and experimental findings on embodiment might turn out to be of relevance in defining functions and brain structures mediating fundamental aspects of self consciousness.

S93

Face and emotional processing as determined by intracranial recordings

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Face recognition is one of the first higher order visual processes developing in man: already in 3-day old human neonates recognition of previously presented faces can be observed. Successful face perception, recognition of their identity and correct interpretation of the facial expressions are mandatory for proper social functioning. Studies in patients and healthy subjects suggest the existence of a specialized network related to face recognition. Evoked potential (EP) studies in patients with intracranial electrodes helped to determine temporal and anatomical aspects of face processing in humans, including processing of emotional features. Evidence from these studies showed that in particular temporal lobe structures participate in these processes.

S94**Agitated and mixed depression**

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Psychic and motor agitation, racing or crowded thoughts, irritability or unprovoked feelings of rage, talkativeness, mood lability and early insomnia are clearly symptoms of nervous excitability and when they are mixed in the picture of a major depressive episode, they constitute a mixed depressive episode. Psychomotor and psychic agitation are equally important for the diagnosis. The adverse response of these states to antidepressant drugs, above all the increase of agitation and of suicidality, makes a clear distinction between simple and mixed depression necessary and urgent. The suicidality induced by antidepressants is related to manifest or latent agitation. Latent agitated depression will be introduced. In mixed depression, treatment should initiate with anti-psychotics, anti-epileptics, lithium and benzodiazepines and when agitation has subsided, and if simple depression persists, antidepressants may be used cautiously. Electroconvulsive therapy is very effective throughout the course of agitated depression.

S95**The function of memory and its disturbances according to Aristotle**

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Aristotle, the Greek philosopher of the 4th century B.C. was a keen observer of human nature. With an astonishingly penetrating thought he studied intrapsychic dynamics and came down to conclusions about memory that are analogous to modern psychological and sometimes psychoanalytical findings. He spoke of the importance of the senses for the production of images, which are repressed and retained as the (subconscious) material of memory. Imprinting of stimuli, retaining them as images and recalling them as a memory are 'processes of the mind through the body', said Aristotle, thus adopting a psychobiological approach. He also put the rules of recollection bringing many examples from everyday life. He noticed that events in life are related in a sequence, are kept in the mind in a series (even unconsciously) and in the same way are recalled in memory (thus coming very close to the psychoanalytic idea of free-association). Aristotle in addition described in detail many memory disturbances, such as those in anxiety, depression, dementia etc.

POSTER PRESENTATIONS**S96****Depression at the patients' diagnosis with cancer**

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Background: Cancer is the second likeliest cause of mortality in Greece. There are 3.500-4000 new cases per year. The

literature suggests that major depression is present in 25% of cancer patients.

Materials and methods: We interviewed 100 patients with different types of cancer and 100 healthy people without cancer as a control group (January-Jul 2005). The Hamilton Depression Rating Scale was used to quantify depression severity.

Results: 41% of the patients fulfilled the diagnostic criteria for Major Depressive Disorder according to DSM-IV-TR in comparison with only 4% of the control group control. This significant difference suggests that cancer is significantly related to the development of depression. The severity of depression is not related to the type of cancer or to gender. However there was a strong relationship between depression and age.

Conclusions: Depression is an important problem in patients with cancer and intense treatment is necessary.

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S97**Increased plasma levels of 8-Iso-PGF2 α in an elderly Greek population with cognitive impairment**

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Background: Oxidative damage has been suggested to play a role in dementia [1, 2]. The purpose of the study was to investigate possible implications of lipid peroxidation in cognitive impairment by determining the levels of plasma 8-iso-PGF2 α in elderly individuals with dementia.

Materials and methods: 37 subjects over 60 years of age with dementia and 33 matched controls were randomly selected from a population in the community after screening with the MMSE and application of the diagnostic criteria of the DSM-IV. Plasma concentrations of 8-iso-PGF2 α were measured in both groups.

Results: Demented individuals had significantly higher mean (\pm SD) 8-iso-PGF2 α levels compared to healthy controls (237.44 \pm 187.44 pg/ml vs 97.64 \pm 42.72 pg/ml, respectively, $p < 0.05$).

Conclusions: This study indicates an association between increased levels of plasma 8-iso-PGF2 α and cognitive impairment in the elderly and indicates the necessity for further investigation of oxidative stress and lipid peroxidation in dementia, rendering isoprostanes as plausible biochemical markers of the disease in peripheral blood.

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S98

Terror & triage

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Background: This paper highlights the results of an international qualitative study examining the impact of terrorism on social service agencies and their labor force. This international study was conducted with focus groups of health care personnel. The major research question concerned the impact of September 11th and other disasters on agencies and social service personnel.

Materials and methods: This qualitative inquiry included a total of 14 focus groups. Recruitment letters were sent to executive directors of a convenience sample of 14 agencies of varying sizes, and locations. Six to eight health care workers were selected to participate in the focus groups.

Results: Findings of this study indicate that when disaster strikes, respondents are often placed in situations where they are expected to assign priority to one action, while negating another, all within an environment of scarcity. Respondents indicated that they experienced feelings of doubt, discomfort, and other forms of ethical dissonance before, during and after a process of prioritization of resources and services, knowing that their actions although beneficial on one level, may perhaps be devastating on another.

Conclusions: Respondents expressed that although experiencing a certain degree of ethical dissonance, decisions were made, and at times, despite feeling that the decision was correct, respondents expressed concern about what was done. A fail-safe model for making ethical decisions does not exist. As a result ethical ambiguity ought to be expected as a natural component of the decision making process, especially during disaster relief, and need not affect the rightness or goodness of a decision.

S99

Are the “atypicals” really atypical? Da mihi facti, dabo tibi ius

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Background: Definitions of antipsychotics, hyperprolactinemia in treatment with antipsychotics, side effects, risks and strategies for management. Aim of the study: Independent,

open, naturalistic study. We assess prolactin levels of patients treated with different atypical antipsychotics, the correlation with the clinical symptoms of hyperprolactinemia (galactorrhea, gynecomastia and amenorrhea), as well as the control on symptoms, complaints and quality of life in these patients.

Materials and methods: We evaluate the prolactin levels of 30 patients with diagnosis “paranoid schizophrenia” who are treated with risperidone, amisulpiride and other antipsychotics in variable dosages. A battery of tests (CGI-S, BPRS) is used. The observation is conducted within the period of 6 months. The prolactin level is analyzed twice, irrespectively of the presence or the lack of clinical manifestations. The patients are analyzed in one and the same laboratory. The symptoms of clinically manifested hyperprolactinemia are actively demanded by the healing psychiatrist, as all patients, regardless of the presence or the lack of clinical manifestations of hyperprolactinemia, are consulted endocrinologist and a physical examination is held. An instrument for assessment of the involved patients is created.

Results: Patients without clinical symptoms of hyperprolactinemia, have considerably increased levels of serum prolactin. The average values for rispolept group are 120ng/ml and 100ng/ml for solian group. A considerable reduction of prolactin level when switching to another antipsychotic is observed. In spite of the clinically significant high levels of serum prolactin, some of the patients wouldn't like to change the medicine.

Conclusions: Despite the target questions looking for hyperprolactinemia symptoms, the patients seldom share about them /often, patients with clinically manifested hyperprolactinemia, are diagnosed after physical examination by endocrinologist. A questionnaire for hyperprolactinemia symptoms is necessary to be developed.

The data collected up to the moment, give us ground to raise the question whether the group of so-called “atypical neuroleptics” does not contain a subgroup of “typical” atypics.

Our clinical observation shows a link between extrapyramidal syndromes and hyperprolactinemia, although it has not been instrumentally verified.

S100

Voluntary modification of musical performance by neurofeedback training

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Background: Neurofeedback displayed significant improvements in the overall quality of the musical performance. Few investigations showed that predictors of good psychomotor performance are low integrated EMG of muscle non-participating in execution and an increased EEG alpha activity (Bazanov et al, 2003; Pantev et al, 1998; Petsche & Etlinger, 1998).

The main objectives of the present investigation was to study the impact of simultaneous individual alpha-EEG stimulating and EMG decreasing biofeedback (Alpha-EEG/EMG BFB) on electrophysiological indices in musicians by comparing responses of musicians to usual practice and practice combined with biofeedback training.

Materials and methods: The aim of the neurofeedback training of 51 musical students was “to attain a state at which

achieving high quality musical performance would be complimented with a feeling of easiness and comfort". Firstly, they had their usual practice (30 minutes), followed by rest and another 30-minutes lasting practice combined with Alpha-EEG/EMG BFB. Efficiency of Alpha EEG/EMG BFB session was calculated as the ratio between the sum-duration of the successful periods during the Alpha EEG/EMG BFB session and the whole length of the session.

Results: Usual practice caused decrease while practice combined with biofeedback increase in individual alpha-activity indices in the alpha-2 band. In the same time usual practice increased muscle tension, while practice with biofeedback decreased EMG. The score of self-estimated "quality of sound" was higher after practice combined with alpha-EEG/EMG-BFB than after usual practice ($p = 0.021$). Efficiency of the biofeedback depended on the power in alpha-2 band, individual alpha peak frequency, individual alpha band width and individual amount of alpha suppression in response to open eyes.

Conclusions: Enhanced somatosensory and auditory feedback during performance on the instrument facilitates the online modification of musical execution skill.

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S101

Individual EEG alpha-indices and nonverbal creativity in female during the spontaneous menstrual cycle in comparison with male subjects

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Background: A major argument for excluding females from research in psychophysiology has been the difficulty in controlling for the confounding factor of hormonal changes associated with the menstrual cycle in women [1]. It was shown that nonverbal creativity is associated with individual EEG alpha-activity indices in males [2]. The aim of this study was to investigate whether changes in nonverbal creativity are associated with changes in EEG alpha activity during the menstrual cycle in females and what is the gender effect in these associations.

Materials and methods: EEG alpha indices levels, its reactivity for opening eyes and Torrance test performance were studied in a

within subject design with 30 women in comparison with 27 men. Basal body temperature was monitored daily; menstrual, follicular, ovulatory and luteal EEG recording sessions occurred before and after the ovulatory temperature rise, respectively. Scores of nonverbal creativity (i.e., fluency, originality, and flexibility) were assessed using the Torrance test of nonverbal performance. 15 10 Hz) > women and 14 men belonged to high individual alpha peak frequency (IAPF group, 14 women and 13 men – to low IAPF (< 10 Hz) group.

Results: The results showed menstrual phase differences in EEG alpha power, IAPF, individual alpha band width and EEG reactivity to open eyes, fluency and plasticity in Torrance test performance, particularly in low IAPF group, but no difference in reactivity in high IAPF group in women. Gender effects were detected in the ovulatory and luteal stages. The study showed that fluency in creative performance was associated with IAPF in high estrogen state, whereas originality and plasticity – with individual alpha band width and reactivity to open eyes in all groups.

Conclusions: This investigation demonstrated that gender effect and the EEG alpha-activity changes in a parallel with changed baseline temperature (hormone levels) are depended on the baseline IAPF. The changes in nonverbal creativity performance coincide with increasing or decreasing individual alpha activity indices in the EEG.

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S102

Considering the major mental disorders as clinical expressions of periodic pathological oscillations of the overall operating mode of brain function the article itself

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Background: Studying shared clinical phenomena in major mental disorder. [1]

Materials and methods: Evidence from 50 years of evaluating shared characteristics and overlaps in clinical expressions and pharmacological responses [2] will be used to consider their collective significance in major mental disorders.

Results: 1. These disorders have a common initial neurodevelopmental origin.

2. They occur probabilistically on some of "at-risk" individuals whose pre-existing underlying structural variance (expressed as temperament) confers vulnerability for such occurrences.

3. They can be considered as clinical expressions of pathologically ordered phase of the overall operating mode of brain function, expressed in the characteristic symptoms for each, made up of recurrent antithetical substitutes i.e., mania / depression, apathy/ explosively, obsessiveness/ slovenliness either-or thinking etc..[3]

4. This mode based on a particular for our brain algorithm (as an emergent quality of complexity) normally ensures, within limits,

the synchrony, coordination, amalgamated subtlety and robust flexibility during the expression of each of the higher faculties. Specifically, mood modulation, coordination of feeling and thoughts, the rules of thinking, sequencing/ scheduling and appropriate responses to the external world. [4]

Conclusions: Such consideration opens opportunities for novel, therapies such as an input of specific, electric signal or magnetic field (versus the crude effect of ECT) or by noise cancellation techniques, restoring and maintaining the normal function of the operating modelt also challenges us into re-thinking the current nosological, procrustean, flawed classification which prevents us from discerning the collective significance of these phenomena.

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S103

Eysenk's dimensions into "the zone" of personality deviations

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Background: Into this study we try to find parallels between Eysenk's "neurotism - psychotism, extraversion – introversion" and personality traits that described personality disorders by ICD-10 system (measured with IPDE).

Materials and methods: 457 persons at the age of 18 up to 40 take part into the study, distributed in three groups:

I group – 185 inpatients with personality disorders traits without any other psychiatric morbidity;

II group – 138 soldiers – comparative group;

III group – 83 students – comparative group;

All of participants respond to the following exclusion criteria:

- Organic brain pathology
- Intellectual retardation
- Psychotic disorders
- Dependencies

Clinical group was explored by Screening IPDE, IPDE and Eysenk's questionnaire.

Control groups was examined by Screening IPDE and Eysenk's questionnaire. When the Screening IPDE results into control groups was "positive" for personality deviations - these persons was excluded from the study.

Results: We investigate dimensional and cathegorial differences between EPQ results for the three groups. We used coefficient for statistical significance for differences of results and Student-Neuman-Keuls analysis. Our results demonstrate that EPQ exploration of personality traits suspect for personality disorders have high level of formal agreement, related to "neurotism" scale that is relevant to the anxiety and distress. This result is valid for dimensional and cathegorial results of test into the three investigated groups.

The high relative gravity of personality disorders integrated by emotional instability explain high scores on "extraversion" scale into the inpatient's group. They sustain statistical differences between clinical and healthy groups.

Conclusions: Expected negative correlations between personality disorders and anxiety was confirmed only for scale "neurotism". Some results contradict to a commonly accepted opinion that describes personality disorders like making suffer to others. Subjectively experienced feeling of anxiety and distress are confirm by other studies.

S104

Adaptation strategies into the context of personality predispositions

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Background: Personality needs of confidence determine choice of behavioral strategies. Confidence needs is an origin of activities that regulate coping strategies. The aim of this study is to identify factor "needs of confidence and its direction and degree. Our investigation describes level of confidence needs, preferred coping strategies and their interrelations.

Materials and methods: One hundred 18 years old students were included in the research. Questionnaire for coping strategies (COPE) and confidence needs scale was used.

Results: We establish significant statistical dependences between needs of confidence and coping strategies choice.

Conclusions: Without absolutism confidence needs is a basic factor of adaptation abilities that define choice of coping strategies. On the other hand we can't ignore character predispositions and social competency of personality.

S105

Diabetes and atypical antipsychotics

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Annals of General Psychiatry 2008, **7(Suppl 1)**:S105

Background: Atypical antipsychotic medicines are highly advanced compared to older classical antipsychotic factors.

However, newer factors have been recently associated with other side effects, such as hyperglycemia, diabetes, increase of the body's weight and abnormal levels of lipids.

Even more alarming, due to high death risks, were numerous reports from patients, who were under treatment with Clozapine or Olanzapine. These patients developed diabetic cetoacidosis soon after starting taking these medicines.

The aim of this essay is to prove whether atypical antipsychotics are associated with the appearance of diabetes, increase of the body's weight and abnormal levels of lipids, or not.

Materials and methods: 102 patients have been studied. They were treated with atypical antipsychotics and they had normal weight, blood diabetes level, and serum lipids, at the beginning of their treatment. They suffered either from Schizophrenia mostly, or from Bipolar Emotional Disorder. These patients were taking Risperidone, Olanzapine, Clozapine, Quetiapine, Amisulpiride, Ziprasidone and Aripiprazole.

Six months after the beginning of the treatment with these particular antipsychotics, the patients' weight, their diabetes level and the number of their serum lipids were measured.

Results: 12 of the patients had symptoms concerning their blood diabetes. It was at a higher level. 6 of them were taking Clozapine, 4 of them Olanzapine, one aripiprazole and one Risperidone. 37 other patients gained weight, 22 of which were taking Olanzapine, 9 Clozapine, 5 Risperidone, and one Quetiapine. 22 other patients had an increase at their serum lipids' level. 11 of them were taking Olanzapine, 5 Clozapine, 4 Risperidone, one Quetiapine and one Amisulpiride.

Conclusions: It seems that almost all atypical antipsychotics and mostly Clozapine and Olanzapine can cause increase of the blood diabetes level, of the weight and of total serum lipids level.

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S106

Sex differences in side effects of second-generation antipsychotics

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Background: Sex was the strongest determinant of subjective tolerability of antipsychotic drugs in a recent study (Barbui et al., 2005) and the authors suggested that studies should no longer consider men and women as a homogenous group. The aim of this review is to investigate whether sex differences exist for susceptibility to adverse effects of second-generation antipsychotics (SGAs).

Materials and methods: Results are based on a Medline search for controlled trials of all atypical antipsychotics.

Results: It is known that pharmacokinetics differ between females and males, with a higher activity in females for CYP3A4 and CYP2D6. Yet, significantly higher plasma levels in women have only been demonstrated for olanzapine and clozapine. Regarding side effects, although not well studied, some of them such as hyperprolactinaemia, weight gain and cardiac effects are reported to affect more often women. There is -although controversial- evidence for more pronounced prolactin levels in females. There are also some published studies that indicate that metabolic syndrome (visceral adiposity, hyperglycaemia, hypertension and dyslipidaemia) induced by SGAs is more frequent in females. Lastly, the risk of QT prolongation is again higher in females. There is no evidence for sex differences in SGAs causing extrapyramidal symptoms, acute dystonia or any other movement disturbance.

Conclusions: In conclusion, there is some evidence of sex differences in side effects of the SGAs. However, data are obtained by posthoc analysis, not to mention that clinical trials of new therapeutic drugs have been conducted, for the most part, with male participants. Future studies with a primary focus on sex differences are required and will help to determine how these differences should influence clinical management.

S107

Sex, sadness and schizophrenia: correlations between negative symptoms and cerebral activations

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Background: Negative symptoms have been considered to be core features of schizophrenia already at the inception of the disorder. Interestingly these symptoms tend to be more pervasive in men than in women patients. The difference has been attributed to the overall more brain abnormalities observed in male schizophrenics, but potential neural mechanisms remain unexplored. The purpose of the present study was twofold: 1) identify significant correlations between negative symptoms and cerebral function in schizophrenia, 2) examine sex differences in the pattern of these correlations.

Materials and methods: 15 men and 10 women diagnosed with schizophrenia underwent functional magnetic resonance imaging (fMRI) during passive viewing of sad (a dying father) and neutral (gardening) film excerpts.

Results: Regression analyses using SPM2 between severity of negative symptoms and cerebral function during processing of sadness in all the patients revealed positive correlation in the left prefrontal cortex (PFC) and negative correlation in the right PFC. The analysis of men only showed positive correlations in bilateral prefrontal, temporal and cingulate cortex, as well as amygdala and cerebellum, but no significant negative correlations. The analysis of women only demonstrated positive correlations in the left PFC and midbrain, and negative correlations in the right PFC.

Conclusions: Present results reveal that the more intense the negative symptoms in schizophrenia the more activated is the

left PFC and the less activated is the right PFC during experience of sadness. In addition, an intriguing sex difference in the pattern of correlations between the negative symptoms and cerebral function became apparent.

Acknowledgements

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S108

Evaluation of Cognitive-Analytic Therapy (CAT) outcome in patients with Borderline Personality Disorder

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Background: CAT is a type of brief psychotherapy, which integrates in theory and practice concepts and methods from cognitive, psychoanalytic, behavioral and other approaches. There are studies showing the effectiveness of CAT in various psychiatric disorders. The present study aims to investigate the outcome of CAT in patients with borderline personality disorder (BPD) with and without an additional axis-I diagnosis according to DSM-IV criteria.

Materials and methods: The sample of the study consisted of 91 patients, who attended the Community Mental Health Center of N/W district of Thessaloniki over a period of 4 years (2002-2005), received a diagnosis of BPD or personality disorder NOS with predominant borderline traits according to DSM-IV criteria and for whom it has been decided to be treated with CAT. The MMPI, the EPQ and the Post-therapy Questionnaire (PtQ) were used as evaluation instruments on the two follow ups, 2 months and 1 year after therapy termination.

Results: On the 2-month follow up, 57 patients, who attended the follow-up, showed a statistically significant improvement on almost all the clinical scales, on the sum of the clinical scales and on some of the research scales of the MMPI, as well as on some scales of the EPQ, compared to the intake. On the 1-year follow-up the patients (N = 40) maintained the achieved improvement. Patients with BPD only (N = 21), showed the same improvement on follow-up, as the patients with BPD and an additional axis-I diagnosis.

Conclusions: CAT is an effective brief psychotherapeutic technique for patients with BPD with and without a comorbid diagnosis (axis-I) of a clinical syndrome. The beneficial effect is sustained at least for 1 year after therapy termination. Further investigation is necessary to validate the above findings in more distant follow-ups.

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S109

Evaluation of Cognitive-Analytic Therapy (CAT) outcome in patients with Obsessive-Compulsive Personality Disorder

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Background: Psychotherapy, in general, is the main therapeutic approach for patients with personality disorders. CAT is a brief psychotherapeutic technique, which has been proven efficacious for patients with various psychiatric disorders. The purpose of the present study is to investigate the outcome of CAT in patients with obsessive-compulsive personality disorder (OCPD) with and without an additional axis-I DSM-IV diagnosis.

Materials and methods: The sample of the study consisted of 64 patients, who attended the Community Mental Health Center of N/W district of Thessaloniki over a period of 5 years (2002-2006), received a diagnosis of OCPD or personality disorder NOS with predominant obsessive compulsive traits, according to DSM-IV criteria and for whom it has been decided to be treated with CAT. The MMPI and the EPQ were used as evaluation instruments on a follow up, 2 months after therapy termination.

Results: Forty-five patients who attended the 2-month follow-up, showed a statistically significant improvement on the majority of clinical scales, on the sum of clinical scales and on some of the research scales of the MMPI, as well as on scales N and E of the EPQ, compared to the intake. The subgroup of patients with OCPD only (N = 11) also showed improvement on the above tests, compared to the intake, as the patients with OCPD and an additional axis-I diagnosis.

Conclusions: CAT is an effective brief psychotherapeutic approach for patients with OCPD with and without a comorbid axis-I diagnosis. Future investigation, in more distant follow-ups, is necessary to validate the above promising results.

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S110**Temperament and character inventory (TCI) personality profile of alcohol misuse patients with and without a co-occurring mood or anxiety disorder**

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Background: Alcohol use disorders (AUDs) are among the leading public health problems nowadays. Very often they co-occur with other psychiatric disorders, especially mood and anxiety disorders.

Quite a few studies exist that explore personality characteristics in individuals with alcohol misuse and a co-occurring mental disorder. Such studies are of primary importance if we are to test the hypothesis that certain genetically inherited personality traits are a common risk factor for AUD and various externalizing and internalizing mental disorders.

Materials and methods: We examined two statistically matched groups (20 patients in each) of AUD patients (ICD-10 diagnosis of alcohol abuse or dependence). The first group consisted of patients with a lifetime diagnosis of mood/and or anxiety disorder and the second group included AUD patients without comorbid disorders. Lifetime psychiatric history was assessed "Composite International Diagnostic Interview" ver. 2.1 /lifetime/.

All the participants filled in the "Temperament and Character Inventory" self-evaluation questionnaire [1]. Data were processed with Statgraphics ver. 8.0.

Results: Preliminary results (the study is still ongoing) show that patients with a co-occurring mood and/or anxiety disorder tend to score much higher on harm-avoidance and lower on self-directedness subscales.

Taken together, these results may be interpreted as a higher propensity to personality deviations in these patients, most likely from the so-called cluster "C" personality register [2].

Conclusions: Additional studies with larger sample sizes are needed to further investigate the complex interaction and causal relationships between mood and anxiety disorders and alcohol misuse.

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S111**Application of a psychosocial/psychoanalytical and massive emotional multisensorial stimulation protocol in the recovery of alzheimer's cases**Luis Maria Sanchez¹, Agustina Leites¹, Liliana Portillo¹, Estefania Ferrari¹, Martinez Gisela¹, Silvana Sastre¹, Alejandra Jalife¹, Juan Gomez Salgado² and William Pierce³¹Neurobiology, Uader Science and Technology Fac, C.del Uruguay, EERR, Argentine²Mental health nursing dpt., Huelva University, España³Psychobiology Lab, Harvard University, USA

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Background: These dementia begin associated with significant personal losses with coping deficit, producing familiar and social isolation behaviours and latter an attention fixation in their death's desire, that trigger the failures in the recognition mechanism associated to each one of the nine senses, that is essential for all activities of the dairy life and also to though, and then carry the well known behaviour abnormalities. When the sensorial recognition system's blockade of the sensorial channels is extended in time, its cause the stimulation blockade of the evolved neurons, then the loss of synapse and probably the neural death and its amyloid accumulation.

Materials and methods: The psychosocial/psychoanalytical multiemotional sensorial massive stimulation's protocol has been applied at present (June 2007) to 62 confirmly alzheimer's cases, from a 84 years old woman, to a 49 years old woman.

Results: Up to phase II the recovery were complete, between one week to three months, depending on family's participation and financial support, and the persons return to the normality. The recovery of cases on phase III and IV were in some cases complete also, but in most of them partly and strange, like youthful state or child state also. In these III to IV phase's cases the recovery demand more than four months.

Conclusions: All the alzheimer's cases were quite different one of another, in their triggers, the dementia process and also in the recovery, suggesting clearly an individual matrix. The family interest and participation and its financial support were the most important difficulties.

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S112**A comparative study on the effect of psychosocial factors on patient-doctor relationship in different clinical settings of a General Hospital**

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Annals of General Psychiatry 2008, 7(Suppl 1):S112

Background: Interaction in patient - doctor relationship forms the basis of therapeutics throughout time. Psychosocial components of this relationship are crucial parameters for its success and may be expressed with different modalities in different clinical environments.

Materials and methods: An observational, cross-sectional survey of 40 patients and 17 doctors from a General Surgery department, 37 patients and 13 doctors from an Internal Medicine department. Participants' views on patient-doctor interaction, socio-demographic data and patients' personality traits were investigated for any effects on patients' emotional satisfaction.

Results: Internists, compared to surgeons, tended to favor encouraging patient's involvement with the decision-making process as well as demonstrating a more caring profile towards him ($p < .01$). Older physicians appear to further promote these differences in their respective settings.

Patients' views were strongly influenced by gender ($p < .01$) and age ($p < .05$) and formed in accordance with elements of their personality. Emotional evaluation of the patient - doctor relationship depended of the congruence (or lack of) between their views in the Internal Medicine setting, but not in the Surgical department setting. Surgical patients responded well to surgeons choosing to adapt an active interest on their general psychosocial status rather than assuming a rigid, 'biomedical' stance. ($p < .05$)

Conclusions: Unique patterns of interaction emerged in the separate settings, yet the adoption of a clinical style adhering to the general guidelines of the biopsychosocial model was appreciated by patients in internal medicine and surgical clinical settings alike, providing us with positive evidence to its value in modern-day therapeutics.

S113**Functional approach of the central nervous system (CNS) based on technological advances: from computers to nanotechnology**

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Background: Numerous scientists over the years have dealt with the capabilities of the human brain. Nowadays, with the

available technological aids, we are able to investigate the biochemistry of the CNS and provide answers to several posed questions. These recent revelations however raised new questions, a constant reminder of how little is actually known regarding this extraordinary neuronal network.

Materials and methods: Four main theories have been developed so far in an effort to simulate the function of the human brain. Namely: 1. The human brain is compared to a single computer, 2. is represented as a computer network, 3. is thought of as a large group of nanomachines, 4. is governed by the laws of quantum mechanics.

Results: The first theory cannot provide insights to even the simplest of the brain functions, since the latter cannot be represented by a single algorithm. In the second case, the human brain can be considered as a computer network, but it exceeds it by far in complexity and nature of capabilities. The third theory offers an analysis at a microscopic level and is quite promising. Finally, the fourth theory provides a novel point of view, revealing a new dimension in the exploration of brain function.

Conclusions: The four theories do not provide finite answers regarding the function of the human brain. It still remains unclear whether one theory approaches the truth to a greater extent or whether in reality a combination of them is observed. In either case, several questions can still be posed: what provides the functional rhythm to the human brain? Is there a central control timer and if yes, where is it located?

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S114**Abnormal Temporal-Difference signals in a Pavlovian Conditioning task in Depressive Illness and effects of Antidepressant Medication**

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Background: Various computational models such as Temporal-Difference (TD) [1] and Kalman filter [2] have been developed to study the behaviour of animals during learning about rewards and punishments. Recent studies have shown TD related prediction error (PE) signals in the ventral striatum (VS), orbitofrontal cortex (OFC) and anterior cingulate [3]. These brain regions are repeatedly reported to be both structurally

and functionally abnormal in depressive illness [4]. Consequently, it was hypothesised that such abnormalities may be associated with abnormal PE signals in depressed patients.

Materials and methods: 15 healthy controls and 15 depressed patients matched for sex and age were scanned using event-related fMRI and appetitive Pavlovian conditioning. To explore the potential confound, as to whether the abnormal signals if any, found in the patients are due to the illness or antidepressant medication they receive, controls were given 20 mg of citalopram for 3 days and re-scanned.

Results: Activations in the VS, mid cingulate and OFC, correlated significantly with PE signals predicted by the TD model. Consistent with our hypothesis, error signals were decreased in the ventral striatum and increased in the subgenual cingulate and hippocampus in patients when compared to unmedicated healthy controls. When medicated controls were compared with patients, decreased activation in the VS disappeared, suggesting a medication effect. However, increased hippocampus and subgenual cingulate activity in patients survived, suggesting an effect due to illness and not medication.

Conclusions: These results suggest that both depressive illness, and the anti-depressant medication used to treat the illness, alters PE signals.

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S115

The usefulness of the Minnesota Multiphasic Personality Inventory (MMPI-I) in predicting dropout from Cognitive Behavioural Therapy (CBT)

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Background: Although treatment outcome relates directly to adherence to therapy, we do not know much on what kind of patients will remain in or dropout from treatment. Increased scores in the Paranoid "Pa" MMPI-I subscale seem to be a prognostic factor of dropout from therapy. Low scores in the

"K" adjustment MMPI-I subscale also seem to be related to premature dropout from therapy. Also Patients with 1-3/3-1 and 2-7/7-2 combinations had significantly more dropout rates.

Materials and methods: Aim of the present study was to investigate personality factors that could predict dropout from Cognitive Behavioural Therapy using the three-point combinations of the ten clinical scales of Minnesota Multiphasic Personality Inventory (MMPI-I).

We studied 102 consecutive patients, with a variety of DSM-IV diagnoses, referred to a clinical psychologists' private practice and treated with CBT. Seventy-two (73.5%) patients completed CBT while twenty-seven patients (26.5%) dropped out of treatment early. All patients had completed MMPI-I just after their intake and evaluation interview. Treatment completers and treatment dropouts were compared using the 1-2-3, 1-3-4, 2-3-4, 2-4-7, 4-7-8 & 6-7-8 combinations, which are the more frequent combinations of the ten clinical scales of MMPI-I. Chi-square test (χ^2) was used.

Results: Not even one of the three-point combinations of the ten clinical scales of MMPI-I could predict treatment discontinuation.

Conclusions: Although MMPI-I is a well-known and widely used instrument in the assessment of personality; the three-point combinations of the ten clinical scales can't be used to predict patients in high risk of dropping out of therapy.

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S116

Association of body weight and gender with self-esteem in schoolchildren. Survey of Ioannina, Epirus, Greece. The Children study

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Background: There is variation in the psychological distress associated with child body weight. Low self-esteem, when observed, provides very little information about the nature of the distress and no indication of the proportion of children with high body weight affected [1, 2, 3, 4]. There is a difference in self-esteem among boys and girls. This study used a domain

approach to self-competence to evaluate self-esteem in a sample of children from the prefecture of Ioannina, Greece [8, 9, 10, 11, 12, 13, 14, 15]. The aim of the study was to determine the associations between body weight, gender and self-esteem in Greek primary schoolchildren.

Materials and methods: A cross-sectional study in 13 rural and 15 urban population of the prefecture Ioannina, Epirus, Greece was conducted. A total of 724 primary schoolchildren (mean age: 10.2 years) participated in the study (322 boys and 402 girls), recruited from 28 schools. Participants completed the Self-Perception Profile for Children (Harter's SPPC) and anthropometric measurements (weight, height and Body Mass Index (BMI) were obtained from all children (5-7).

Results: Children with higher body weight had significantly lower self-esteem in athletic competence (Pearson's correlation coefficient, $r = -0.37$, $p < 0.01$), physical appearance ($r = -0.3$, $p < 0.01$), social acceptance ($r = -0.29$, $p < 0.01$) and global self-worth ($r = -0.37$, $p < 0.01$) compared with normal weight children. Girls scored lower in scholastic competence (Pearson's correlation coefficient, $r = -0.09$, $p < 0.05$), social acceptance ($r = -0.13$, $p < 0.001$) and global self-worth ($r = -0.14$, $p < 0.001$) compared with boys. Children with low global self-worth have 29% more probability to be girl. (odds ratio = 0.71, $p < 0.01$, CI: 0.55-0.91).

Conclusions: High body weight impacts the self-perception of children entering adolescence, especially in girls, but in selected areas of competence. Children with high body weight are at particular risk of low global self-worth, scholastic competence and social acceptance. Quantifying risk of psychological distress should help in arguing for more resources in maintaining a normal body weight in children.

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S117

A psychological and nutritional intervention program in individuals with disordered eating attitudes: a pilot study

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Background: Disordered eating attitudes and behaviours are common in young women in Western countries. Disordered eating attitudes are similar to eating disorders, but are less severe and do not meet the specific clinical definition for an eating disorder. The presence of these behaviors can lead to significant psychological and medical risks and are associated with the possibility of clinical eating disorders.

Materials and methods: The study involved 17 adult women, undergraduate students of the Nutrition and Dietetics Department between the ages of 18 and 20 years. Subjects were asked to complete the Eating Attitudes Test before and after the intervention. The EAT-26 (Garner, 1982) has been used as a measure of disordered eating and it is probably the most widely used standardized measure of symptoms and concerns characteristic of eating disorders. It contains 26 items and has found to identify eating disturbances in non-clinical samples. A score of > 20 on the EAT-26 score represents disordered eating attitudes. A score of 20 or less is considered normal. Women received a psychological and a nutritional intervention, the duration of which was one hour per week for six consecutive months. The psychological intervention was designed to provide support for their self-esteem and their assertiveness especially in social situations. The nutritional intervention was designed to promote a more healthy diet. Women were assessed before the intervention and 6 months later (immediately post-intervention). **Results:** The mean EAT-26 score before the intervention was 27.9 ± 8.7 (min = 21 and max = 46) and the mean EAT-26 score after the intervention was 22.3 ± 6.3 (min = 17 and max = 33). A statistically significant difference was found in the eating attitudes ($p = 0.014$) before and after the intervention (paired t-test).

Conclusions: According to the results of this study it can be suggested that the individuals supported in a nutritional and educational level are likely to adopt better eating attitudes and some of them can stop suffering from disordered eating attitudes.

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S118

Effects of nitric oxide synthase inhibition in the CA1 region of rat hippocampus on spatial learning
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Background: Nitric oxide (NO) is thought to be involved in synaptic plasticity contributing to learning and memory in several brain areas including the hippocampus [1]. The hippocampus is believed to have a critical role in the processing of spatial information [2]. But, data on the role of hippocampal NO in spatial or other types of learning are not consistent [3, 4]. In the present study the effect of NO synthase inhibition in the CA1 region of rat hippocampus on spatial localization was investigated in the Morris water maze.

Materials and methods: Rats cannulated in the CA1 region of their hippocampus received bilateral injections of vehicle (saline) or N-omega-nitro L-arginine methyl ester (L-NAME), a NO synthase inhibitor (50, 100 and 200 microgram/0.5 microlitre) through the cannulae 30 minutes before training each day. Animals were subjected to 5 days of training in the Morris water maze; 4 days with the invisible platform to test spatial learning and the 5th day with the visible platform to test motivation and sensorimotor coordination.

Results: The results showed dose-dependent increases ($p < 0.001$) in escape latency, traveled distance, heading angle, and dose-dependent decreases ($p < 0.01$) in target quadrant entries in L-NAME-received groups as compared to the control group. This impairment was reversed by co-administration of mole equivalent doses of L-arginine, the NO precursor.

Conclusions: On the basis of the present data, it is concluded that processes mediated by NO synthesis in the hippocampus are essentially involved in spatial learning.

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S119

Epilepsy presenting panic attacks and hallucinatory experiences as drug side effect: a case report

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Background: Panic disorder is characterized by spontaneous, unexpected occurrence of panic attacks with discrete periods of intense fear accompanied by symptoms like as palpitations, pounding heart, sweating, sensations of shortness of breath, feeling dizzy or lightheadedness and fear of losing control or fear of dying [1].

Panic attacks could be primary or secondary in origin. Numerous organic underlying causes such as epilepsy may lead to the development of panic attacks. It has been declared that although there are no exact data, simple partial seizures are associated with a range of psychiatric disorders in which panic attack is one of them. Therefore, to treat properly, simple partial seizure should be noted as differential diagnosis [2]. Panic-like attacks may occur in simple or complex partial seizures along with depersonalization and derealization experiences similar to the conditions in primary panic attacks [3]. Here we report a case of epilepsy whose main disease presentation was panic attacks and experienced unusual side effects during the course of drug therapy.

Materials and methods: A 22-year-old female reported two panic attacks characterized by abrupt shortness of breath, palpitations, feeling of choking, extreme fear and feeling of going crazy was referred to the psychiatric emergency at Imam Hossein Hospital in Tehran, Iran. Physical and neurological examinations showed no abnormal findings. She took 0.5 mg of clonazepam and 30 mg of Imipramine each day with the diagnosis of panic disorder and was advised to be followed up in a week. In the revisit session, the symptoms of the patient had been considerably decreased, but after 2 weeks she returned with exacerbation of panic attacks with fluctuations in consciousness. The patient described the attacks as such: “suddenly without fear I feel that my surrounding environment has become dream like and I can’t hear the voice of people around”. In addition she had the history of above attacks without fluctuations in consciousness about 5 years ago which had been relieved without any special medication.

Thus, with the likely diagnosis of seizure, CT scan and EEG were done derealization and depersonalization states to rule out the organic causes. The CT scan report was normal but EEG showed abnormal waves in form of sharp spike waves in background of slow epileptic waves in the right temporal lobe.

Clonazepam and imipramine were discontinued and sodium valproate was prescribed with 600mg doses each day. After a week, panic attacks and derealization state reduced considerably, but later the patient experienced a brief panic condition and the medication was replaced by carbamazepine 1600mg daily by another physician probably with the clinical suspicion of drug inefficacy. Imipramine restarted with the previous dose (i.e. 50 mg daily) as well. Two weeks later, two derealization states occurred and she would hear some people conversing with each other at times which made her very frightened. She was aware of the auditory hallucinations and declare them through full insight and sun real during the interview, although she had got a partial insight to the hallucinations within the illness. Carbamazepine was again replaced by sodium valproate and the hallucinatory experiences relieved soon.

Results: Till now, the patient has been under sodium valproate as well as 9 months treatment duration with imipramine. No panic attack or dissociative state has been developed in this time period.

Conclusions: In this case, epilepsy was known as the underlying cause for panic attacks. Although some authors have noted auras as major diagnostic factor for epilepsy, we did not detect any aura in the reported case. Moreover, carbamazepine led to the exacerbation of panic attacks and development of pseudopsychotic episodes. Panic attack could be the primary manifestation of a simple convulsion [3, 4, 5, 6, 7].

Hallucinatory experiences can be considered as the direct side effect of carbamazepine consumptions [8]. For instance, in a report of case with visual hallucination carbamazepine was noted as the likely cause. Auditory perceptual disturbance due to carbamazepine was also reported [9].

Carbamazepine aggravates absence seizure [10] which may account for the recurrence of panic attack after initiation of the drug in this patient. Meanwhile, several cases with panic attacks have been reported in whom the primary diagnosis was temporal lobe epilepsy [11]. We cannot hypothesize about the co-occurrence of absence and temporal lobe epilepsy in the patient partly because lack of follow-up EEG tracings. Another cause for development of panic attack after prescription of carbamazepine may be related to the simultaneous prescription of imipramine which lowers seizure threshold as a tricyclic agent consequently [12]. Individual drug side effects should be considered as likely underlying causes of panic attacks in which further controlled trials would be necessary.

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S120

Addiction to the use of internet and psychopathology in Greek adolescents: a preliminary study

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Background: The aim of this study is to investigate the psychopathology of adolescents in relation to the use of the internet.

Materials and methods: The sample consists of 339 adolescents (mean age: 15.41 years, SD:1.59, min/max:13/18), habitants of the city of Karditsa, Greece. The sample was selected using the method of randomized stratified selection by schools. The Diagnostic Questionnaire for Internet Addiction (YDQ1), based on 8 criteria, was used as a tool to categorize the internet users. Four groups were formatted: no-users, minimal users, moderate users, excessive users. The Symptoms Checklist questionnaire (SCL-90-R2) was used to investigate the psychiatric symptoms. The sample completed also an inventory concerning socio-demographic factors.

Results: The sample was distributed in the 4 groups: non users (32.4%) and according to YDQ as follows: minimal users 49%(0-2 positive criteria in YDQ), moderate users 12.7%(3-4 criteria) and the excessive users 5.9%(5 or more criteria). T-test was used to compare the mean scores of psychopathology between the 4 groups. The group of excessive users presents statistically significant differences: a) with the group of non users in the factors of interpersonal sensitivity ($t = -2.79$, $p = 0.006$) and of distress of positive symptoms ($t = -3.04$, $p = 0.006$); b) with the group of minimal users in the factors of interpersonal sensitivity ($t = -2.53$, $p = 0.012$), psychoticism ($t = -1.98$, $p = 0.049$) and of distress of positive symptoms ($t = -2.65$, $p = 0.015$). No statistically significant differences were found between the addicted users and the group of moderate users.

Conclusions: Greek adolescents of our sample addicted to the internet use seem to be more sensitive in their interpersonal

relationships and to suffer from distress more than those adolescents who have a minimal or no use of the internet.

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S121

Correlation of life style and socio-demographic characteristics with insomnia of Greek adolescents students

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Background: The aim of this study is to detect the factors related to the insomnia in a sample of Greek adolescents.

Materials and methods: The sample consists of 339 adolescents (mean age: 15.41, SD:1.59, min/max:13/18), habitants of the city of Karditsa, a town sited in the central Greece. The sample was selected using the method of randomized stratified selection by schools. The students completed the Athens Insomnia Scale (AIS) and a questionnaire of demographic characteristics and questions relative with their social life, as well.

Results: To control the correlation, there was used the one-way ANOVA. The reports of students about their sleep problems are increased with the age ($p < 0.001$) and therefore the students of senior high school present higher scores in the scale of insomnia in comparison to the students of High School ($F = 12.56, p < 0.001$). Father's lower educative level ($p < 0.01$) and mother's ($p < 0.001$) as well, is related with increased complaints for disturbed sleep of students. The low level of communication between students and their parents ($F = 12.83, p < 0.001$) but also the low level of communication between parents ($F = 8.76, p < 0.001$), the bad financial situation of the family ($F = 6.87, p < 0.001$) are related positively to insomnia. Substance use behaviours of students (smoking, alcohol) are related positively to the disturbances in sleep ($F = 21.52, p < 0.001$ and $F = 23.60, p < 0.001$ respectively). The particular group of students with lower school performance is more likely to report symptoms of insomnia ($F = 16.12, p < 0.001$) than those with a high school performance.

Conclusions: Sleep problems of Greek adolescent students are related to older age, to low educative level of parents, to bad communication with their parents but also between parents, to smoking, alcohol and low school performance.

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S122

30 year old woman with possible Creutzfeldt-Jakob Disease initially presenting with psychiatric symptoms: a case report

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Background: Creutzfeldt-Jakob disease is a rare neurodegenerative disorder that belongs to the so called transmissible spongiform encephalopathies. Four types of the disease are recognized today: The sporadic form, responsible for over 80% of all cases, the familial, responsible for about 10% of cases, the iatrogenic and finally the variant form.

Materials and methods: We report a case of a thirty year old female Caucasian woman initially presenting with psychiatric symptoms.

Results: The patient's problems had begun six months prior to hospital admission with symptoms of disorientation in place and time and behavioral disturbances. She was treated initially as a psychiatric outpatient receiving medication. After 4 months of unsuccessful treatment she was hospitalized and subjected to 16 E.C.T. sessions. About 2 months after E.C.T., the patient was admitted to our hospital with neurological symptomatology (gait and speech disturbances). Biochemical examination, E.E.G and lumbar puncture (including protein 14-3-3 assay) were inconclusive, while brain MRI revealed brain atrophy and high signal intensity in the region of basal ganglia, imaging suggestive of Creutzfeldt-Jakob Disease. 22 months after initial presentation the patient is in a state of akinetic mutism.

Conclusions: To our knowledge this is the first report presenting in Greece concerning possible Creutzfeldt-Jakob Disease in such a young person. The initial presentation with pure psychiatric symptoms is also of interest, while the time elapsed since the presentation of neurological symptomatology is considered to be quite long.

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S123

Deliberate long-term exceeding of recommended dose of venlafaxine by a dysthymic patient. a case report

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Background: Prescription of drugs must follow established guidelines, especially concerning maximum daily dose. Nevertheless

some clinicians and researchers often try high doses for optimizing results. Patients also tend to raise the doses especially of anxiolytics and analgetics

Materials and methods: We present a case report of a dysthymic patient who, by his own decision and against the doctor's recommendations, continuously receives venlafaxine at a dose almost double than the officially maximum recommended.

Results: A 38 year old man who suffered of dysthymia following a head injury after a car crash, presented for treatment. He had no permanent neurological and cognitive consequences except from dizziness. Treatment started with venlafaxine, as another agent tried before proved inefficient. Following titration the psychiatrist recommended the dose of 300mgs per day by means of XR capsules. The recommended maximum daily dose of the certain drug is 325mgs. At the following visits his condition had improved but with no complete remission. During the regular once-per-month follow-up the patient announced that he had by his own decision increased the dose to 600mg daily, and he felt much better. Despite the continuous precautions given by the doctor about the maximum dose and the possible harm he insisted to his initial decision managing to obtain the extra amount by means of private purchasing. The tests he underwent for liver and renal function were normal, and the ECG showed moderate elevation of heart rate. He suffers minor side-effects like constipation and dry mouth. He continues to do so for 2 years now.

Conclusions: The above case report is presented for discussion in two topics. A. the limits of dose-related response of venlafaxine, and B. the possible altered pharmacokinetics of venlafaxine in certain patients.

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S124

Psychiatric morbidity and burden among caregivers: a cross sectional study in rural north Halkidiki (Greece)

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Background: This study is concerned with the health needs of informal caregivers of frail elderly. Its objective is the assessment of the caregiving profile, the examination of the caregivers burden and morbidity and the investigation of the factors which contribute at this burden.

Materials and methods: A cross sectional study was designed and conducted at two municipalities of northern Halkidiki. The elderly and their caregivers were found via the municipality and European Community co-funded program "home care". The researchers interviewed participants using a questionnaire consisted of demographic, social condition and health need data, the Zarit Burden Interview (ZBI), as well as the General Health Questionnaire-28 (GHQ-28), both translated and standardized in Greek.

Results: The majority of caregivers were women (46 female, 5 male). They offer their care giving services for many hours per

week, with a median of 70 hours per week, ranging from 14 to 112. Using the ZBI, we found that 11.2% of the caregivers experience "no to low" burden, 39.2% "mild to moderate", 39.2% "moderate to severe" and 9.8% "severe" burden. The mean average score of the responses to ZBI was 39.69 (SD: \pm 16.29). Caregivers experiencing severe burden tend to take care of the elderly for more hours than those without severe burden, whilst the more hours devoted to care-giving the higher the ZBI score is (Spearman's correlation coefficient: 0.48, $p < 0.001$). Duration of care-giving also does not appear related to burden of care. 84.3% of caregivers gave a score which was above the cut-off point 4/5 of the GHQ-28, and the higher percentage (82.4%) of morbid responses was given at the subscale of anxiety. Caregivers with a GHQ score above the cut-off point experience a more severe burden of care (Spearman's correlation coefficient: 0.456, $p = 0.001$) and also have rate their health in a lower level (Spearman's correlation coefficient: 0.329, $p = 0.018$).

Conclusions: Gender, age, relation with elderly, activities of daily living and the duration of care-giving don't seem to have any statistically significant relation with the burden of care. On the contrary, hours of care-giving per week and GHQ scoring are positively associated with increase of burden and with lower levels of self rated health.

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S125

Mentally ill patients who were accompanied and those who weren't on their first visit to the Mental Health Center of Peristeri

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Background: The purpose of this study was to spot differences between the two above groups in relation to a variety of demographic and clinical variables.

Materials and methods: 285 patients took part in this study. 45 of them were accompanied whereas 240 weren't. All these patients visited our Center during 2003. This year was chosen randomly. Several variables were examined such as: sex, age, educational level, family status and diagnosis.

Results: In both groups the women dominated in number in relation to the men. As for the educational level those who finished high school dominated in both groups.

The average age of both groups was about 34 although it differentiated completely between the sexes.

Something else that is worth noting is the predominance of married patients in the group of non-accompanied in contrast to the other group.

Finally, in relation to the diagnosis, the patients with psychosis and secondarily those with affective disorders predominated in the group of accompanied patients in contrast with the other group where the predominated patients were those with affective disorders and secondarily with anxiety disorders.

Conclusions: From the results it seems that the most influential variables in creating the prementioned groups of patients are those of family status and diagnosis.

The predominance of the unmarried psychotic patients in the group of accompanied patients in contrast to those who were married and with affective-anxiety disorders in the other group of non accompanied ones, seems to be logical.

S126

Effects of neonatal hypoxia on mice behavior and oxidative stress parameters

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Background: Approximately 2,9-9,0 of 1000 infants experience some degree of perinatal ischemic-anoxic or prolonged anoxic insult [1].

Materials and methods: Seven days old male Swiss mice were distributed on three groups: hypoxia (H), maternal separation (MS) and no handling (NH). H group underwent to 10% oxygen during 6 hours/day for 6 days and MS group was maintained in normoxia, but separated from their dams such as H group. When mice completed 3 months old, they were tested on locomotor activity boxes or in plus-maze. The parameters measured were erythrocyte catalase, superoxide dismutase and glutathione peroxidase (GPx) and cerebral catalase. Data were analyzed by one-way ANOVA test and Bonferroni post-hoc test, when appropriated.

Results: On the activity boxes, during the 5 first minutes, it was observed a significant decrease of vertical movements on H group, when compared to other groups. However, after 30 minutes, the groups didn't differ. Besides, H mice demonstrated a diverse emotionality on plus-maze, once the quantity of fecal boli and urine was significant different from group NH. Considering oxidative stress, only GPx values were increased on H group compared to MS group.

Conclusions: Neonatal hypoxia is capable of generating long-term alterations on mice behavior and on production and/or activation of some antioxidant enzymes.

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S127

Distribution of Cytochrome P450 2D6 in the human brain: potential role in psychotropic drug response

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Background: The cytochromes P450 (CYP450) 1-3 are involved in 70-80% of all phase-I dependent metabolism of drugs. Highly polymorphic CYP450 2D6 gene is coding biotransformation of about 25% of clinically used medications, including opioid analgesics, antipsychotics and antidepressants. Its liver tissue expression is well investigated, but still controversial information is available regarding the presence in the human brain, as well as the contribution to psychotropic drug actions and adverse drug reactions. This review followed-up the published data according to the localization, regional distribution and protein expression of CYP 2D6 in CNS and analyzed the current information about its role in local drug pharmacokinetics and drug response.

Materials and methods: MEDLINEplus, PubMed, Entrez and Medscape databases and electronic journals were searched for studies on CYP 2D6 in the human brain. Published research articles and reviews on pharmacogenetics of oxidative metabolism and psychotropic drug response were observed for the potential role of CYP 2D6 brain expression.

Results: Reviewed studies demonstrated CYP2D6 distribution, CYP2D6 mRNA and protein constitutive expression in neuronal and glial cells in certain CNS regions [1, 2, 3]. Some data supported differences in brain CYP2 induction, depending on the region, cell type and inducer. CYP2D6 was found to be involved in the brain endogenous substances metabolism and its enzyme activity could be under various regulatory mechanisms with potential influence on drug response [4].

Conclusions: Constitutive expression of CYP2D6 in CNS may create a local environment of drug metabolism, which, along with the potential neurotransmitter modulation, may contribute to altered sensitivity and inter-individual variability in psychotropic drug response.

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S128**Myth and reality: the social perception about schizophrenia and bipolar disorder in the Modern Greek society**

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Background: The aim of this research is to study the views and perceptions of the general population on two of the most common psychiatric illnesses: schizophrenia and bipolar disorder. In the past few decades there has been significant progress in the direction of informing people about mental health issues and raising awareness. Is the misconception that mentally ill people are dangerous and violent changing or not?

Materials and methods: We have designed an anonymous questionnaire comprised closed questions on schizophrenia and bipolar disorder. There are 4 demographic questions assessing the gender (50% men, 50% women), age and education (14% basic education, 42% High school education and 44% Higher education) of our sample and 30 statements concerning the two psychiatric illnesses, where the research part-takers had to choose between True or False according to their held views, beliefs and knowledge. The questionnaire was distributed to a stratified sample of N = 100 excluding health professionals

Results: It seems that the majority of our sample has an average knowledge about both schizophrenia and bipolar disorder. However, a substantial percentage of our sample proved to be inadequately informed, scoring very poorly. This research shows that there is still a certain level of discrimination against mentally ill people and a tendency to exclude them from social life.

Conclusions: According to our research, people are more informed about schizophrenia than about bipolar disorder. It seems that all the action taken towards raising the awareness of the general population about mental health has considerably positive results. However, it is crucial that this action does not stop at this point.

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S129**Psychosis and hermaphroditism: a case report**

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Background: A gender identity disorder has as its main symptom a persistent preference for the role of the opposite sex and the feeling that one was born into the wrong sex. People with disordered gender identity try to live as or pass as members of the opposite sex. Gender identity disorder may be a symptom in the context of a psychotic disorder.

Materials and methods: Patient, 52 years old, underwent sex- reassignment surgery in the age of 22. She was adopted in

her infancy and she had masculine and feminine looking genitals. During her childhood she had preference for cross- dressing and simulating female attire, strong and persistent preferences for cross- sex roles in make- believe play, intense desire to participate in the stereotypical games and pastimes of the other sex, strong preference for playmates of the other sex, persistent discomfort with her sex and sense of inappropriateness in the gender role of being a boy.

Results: Since the age of 31 she has numerous hospitalizations, under the diagnosis of schizoaffective disorder. She suffers from delusions of persecution and reference; there are deficits in transpersonal communication and social skills, feelings of worthlessness and psychomotor retardation.

Conclusions: Psychopathology should be scrutinized in subjects with hermaphroditism. In the differential diagnosis, gender identity disorder, intersex disorders (androgenital syndrome, Turner's syndrome, Klinefelter's syndrome, testicular- feminizing syndrome, enzymatic defects in XY genotype, pseudohermaphroditism) and psychotic disorders, with delusions of being other sex, should be taken into account. It needs further investigation whether hermaphroditism is likely to trigger psychotic decompensation in a patient.

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S130**Group programmes for recovery from psychosis: a systematic review**

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Background: Pharmacotherapy can improve some of the symptoms of schizophrenia but has limited effect on the social impairments that characterize the disorder and limit functioning and quality of life. The review will consider the current evidence for effectiveness of group therapy as an adjunct to pharmacotherapy for schizophrenia and schizoaffective disorders.

Materials and methods: We reviewed published outcome studies since 1985 identified in MEDLINE and PsycINFO searches, based on the following key variables: psychotic-disorders-therapy, schizophrenia, schizoaffective disorders, group therapy, psychoeducation, psychotherapy, psychosocial treatments, social skills training.

Results: We identified 20 studies: 13 on social-occupational skills training, 4 on psychoeducational interventions, 1 on group cognitive behaviour therapy, 1 on psychoanalytic group psychotherapy and 1 on supportive group therapy. Controls were included in 14 and all studies included medication. Benefits in symptoms as well as social and vocational functioning associate with group therapy. Many studies lack appropriate control groups, follow-up and standardised measures of symptoms and diagnosis.

Conclusions: Adjunctive group therapy augment the benefits of pharmacotherapy and enhance social functioning in psychosis. Better designed studies would reduce the risk of over-estimates of effect sizes. Few studies, small sample sizes, brief treatment durations, nonstandardized assessment instruments, differences in patient (i.e., acute versus treatment resistant) and variable staff training may have contributed to the limited positive outcomes.

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S131

Three-year clinical experience with the long-acting injectable formulation of the atypical antipsychotic risperidone

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Background: Risperidone is the only atypical drug available as a depot or long-acting injectable formulation. Long-acting intramuscular risperidone injection (RLAI) is a formulation that combines the benefits of atypical antipsychotics with improvements in compliance associated with depot formulations.

Materials and methods: We systematically followed-up 33 (24 male and 9 female) -according to DSM-IV- schizophrenic patients (paranoid:20, disorganized:10 and undifferentiated type:3), with average age 39.54 years (26-55) and average duration of illness 14.96 years (5-26), for more than 18 months. Patients demonstrated a variety of reasons for receiving a long-acting injectable antipsychotic drug, including a history of non-compliance (57%), insufficient control of symptoms with previous atypical antipsychotics (28%), and adverse events with other treatments (15%). 21 (64%) patients were hospitalized when RLAI was initiated. The average dose of RLAI was 50.75mg every two weeks. Antipsychotic, anticholinergic or benzodiazepines coprescription was infrequent.

Results: After more than 18 months of treatment (average duration of follow-up: 25.125 months) many patients (73%) show significant and sustained clinical improvement in their symptoms over their original condition (CGI and BPRS score)

and had no relapse or admission during this period despite their history of frequent exacerbations of symptoms and many hospitalizations. Treatment was well tolerated as demonstrated through the adverse event profile.

Conclusions: Long-acting risperidone injection seems to be an important advance in the management of patients requiring continuous antipsychotic therapy for long-term maintenance treatment. It seems to have the potential to extend benefits of assured medication delivery and improved long-term outcomes. Initiating it during inpatient treatment may be an important strategy in improving long-term outcomes among patients with schizophrenia.

S132

The impact of urban air pollution exposure on the development of alterations on oxidative stress and behavioral parameters in adult mice

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Background: The detrimental effects of air pollution on health have been recognized for most of the last century. It is well known that environmental conditions are related to the risk of developing cardiovascular and pulmonary diseases [1]. However, few studies involving other parameters are known, such as behavior and oxidative stress, which are the focus of investigation on the present study.

Materials and methods: Swiss male mice were daily exposed to the urban polluted air (pollution group) or filtered air (control group) for 3 months inside a special chamber, which reproduced a real exposure condition. We performed activity box and elevated plus-maze (EPM) as behavioral tests; and erythrocyte antioxidant defense parameters, including catalase, superoxide dismutase, glutathione peroxidase activities and total glutathione concentration. Statistical analysis were performed by student t test ($p < 0.05$).

Results: In respect to motor activity, pollution group demonstrated significant increase of this parameter compared to control group, whereas on EPM test, the pollution group presented a significant decreased number of entries into the open arms. Moreover, air pollution could decrease significantly superoxide dismutase and glutathione peroxidase activities.

Conclusions: The results suggest that air pollution could affect diverse aspects of mice behavior. Indeed, air pollution was capable of decreasing the erythrocyte antioxidant defenses, suggesting an alteration on oxidative stress status.

Acknowledgements

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S133**Molecular analysis of patients with autistic behaviour**

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Background: Autism and Pervasive Developmental Disorders (P.D.D.) belong to the group of neurodevelopmental disorders with a prevalence of 5-10/10,000 and a male to female ratio of 3-4:1. During the last decade there has been significant progress internationally in the identification of genes predisposing individuals to autism [1]. This study aimed to analyse the Neuroligin 3 gene (NLGN3, Xq13) in patients with Autism Spectrum Disorders (A.S.D.) [2, 3].

Materials and methods: The population studied includes 367 individuals (169 children, 154 mothers, 44 first-degree relatives). All patients had been characterised as autistic by neurologists and psychiatrists according to the DSM-IV criteria. In addition, all patients were examined by clinical geneticists and chromosomal aberrations as well as Fragile X syndrome were excluded. The mutations Y74Y and R451C of the NLGN3 gene were screened in our sample.

Results: The total of 367 samples were examined with ARMS PCR but none of them was positive for the mutation Y74Y. The dHPLC screen for the R451C mutation has so far been performed in 200 out of 367 samples. These samples didn't prove positive for the existence of this mutation.

Conclusions: This is the first molecular study of individuals with A.S.D. in Greece. In our sample the research performed didn't reveal the Y74Y or R451C mutations in the NLGN3 gene. The study will be continued for the completion of the R451C mutation screen and will extend to screen the NLGN4 gene, which is also a candidate for A.S.D. [3, 4]. The final results will allow for a genotype-phenotype correlation in the Greek population.

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S134**Neuropsychological evidence of conversion from mild cognitive impairment (MCI) to dementia**

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Background: The state between normal cognition and dementia is known as mild cognitive impairment (MCI) [1]. While cognitive impairment that does not meet the clinical criteria for dementia is common, it is known that MCI, is associated with an increased risk of developing dementia [2, 3]. Worse performance on neuropsychological tests (> 1 SD from the mean performance) is a significant marker of cognitive impairment [4]. The purpose of the present study is to assess neuropsychological functions in clinically diagnosed MCI subjects and to determine evidence of preclinical dementia.

Materials and methods: One hundred and three (N = 103) patients who met the clinical criteria for MCI were assessed and after 12 months, thirty five patients of them (N = 35) were re-assessed, since during the first examination, their performance on memory tests and other cognitive tests deviated significantly from performance of healthy controls (N = 121). All patients underwent an extensive series of neuropsychological tests, covered many cognitive domains [4].

Results: MCI subjects showed poorer performance compared to controls, especially on tests of verbal and visual memory (p.000). However, they constituted a heterogeneous group, since re-examination revealed subgroups a) with improved performance and/or no more decline because of reversible reasons, b) with stable performance without further decline and c) with progressive decrease of performance and decline in many cognitive domains. Subjects with decline in multiple cognitive domains, apart from memory, constituted a homogeneous group with distinctive neuropsychological characteristics. Between test re-test, the range of scores on neuropsychological tests was found to increase. Moreover, this group performed significantly worse (p.000) on tests that assess speed of information processing, recall of meaningful new semantic and visual material, amount and rate of verbal learning, abstract reasoning and executive functions. The above-mentioned dysfunctions progressively resulted in decline of intelligence (verbal cognitive functions and visuomotor dexterities).

Conclusions: Given their performance on an extensive neuropsychological battery, subjects with clinical MCI show a characteristic profile of dysfunctions with decline in multiple cognitive domains. Test re-test assessments provide increased evidence that these multiple cognitive impaired subjects constitute a homogeneous group with high risk of conversion to dementia.

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S135

EEG correlates of successful semantic encoding during wakefulness

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Background: Event-related brain potential (ERP) studies have demonstrated that encoding of subsequently recalled items elicit a more positive response than non-recalled items, an effect known as the “difference due to subsequent memory” (Dm-effect) [1]. We studied whether specific ERP characteristics during declarative learning of unrelated word pairs correlate with subsequent successful memory recall.

Materials and methods: Thirteen healthy young males (21–28 y) learned 154 unrelated word pairs, which were recalled later. EEG (F3, F4, C3, C4, P3, P4, O1, O2) was continuously recorded during encoding and recall. Stimulus-locked ERPs during the encoding session were averaged separately for successfully recalled and non-recalled word pairs and then subjected to a four way rANOVA with factors ‘condition’ (recall vs. not-recalled), ‘laterality’ (left vs. right), ‘antero-Posterior-site’ (frontal vs. occipital), and ‘time’ (0.2–1.9 s after stimulus onset).

Results: Results disclosed a main effect for the factors ‘condition’, ‘antero-Posterior-site’ and ‘time’ ($p < 0.05$), and interaction effects for ‘condition’x’time’ ($p < 0.05$), ‘laterality’x’time’ ($p < 0.001$), ‘antero-Posterior-site’x’time’ ($p < 0.01$) and ‘laterality’x’antero-Posterior-site’x’time’ ($p < 0.01$). Post-hoc analyses revealed significantly higher ERPs between 0.35 and 1.1 s after stimulus onset for successfully recalled than non-recalled word pairs. Furthermore, negative correlations were found between mean ERP-activity in the 0.35–1.1-s range in the left hemisphere at

learning and the number of subsequently recalled word pairs ($r = -0.59$ to -0.72 ; $p < 0.05$).

Conclusions: Our data indicate a Dm-effect within a wide time window of the ERP in a verbal memory task, and that less positive mean ERP-activity in left cortical areas relates to enhanced success during subsequent semantic recall.

Acknowledgements

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S136

Suicidal behavior and personality

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Background: The aim of this study is to investigate the relationship between characteristics of personality and suicide. Hostility is considered to be an important risk factor for suicidal behavior.

Materials and methods: The relationship between hostility and suicide behavior was investigated in 57 suicide attempts. The sample of the study consisted of 57 patient’s 5 males and 52 females with a history of recent suicide attempt. An equal number of 57 healthy matched for sex and age that did not report a history of self-harming acts, was used as a control group.

Results: Statistically significant correlations were found among the parameters of hostility.

Conclusions: The results of this study indicate that the scores of the parameters of hostility introverted and extroverted were higher in the attempters than the non-attempters. Specifically high scores were found on the depression, paranoid and introversion hostility scales.

S137

Examining the possibility of an acquired deficit in audiovisual temporal perception for speech and musical events

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Background: Multisensory interactions between audiovisual-speech inputs have primarily been investigated in healthy participants with only a limited number of studies identifying patients with a disruption of audiovisual perception as a consequence of other neurological deficits. A specific disruption of audiovisual speech integration has, in fact, never been reported until recently by [1]. They described patient AWF

who experienced a temporal mismatch in audiovisual speech in the absence of any language/sensory impairment. Similarly, patient RW reported perceiving auditory-speech as occurring earlier in time than the corresponding visual-speech. Initial testing revealed that RW indeed appeared to have a problematic temporal percept of audiovisual speech. Methodological problems, however, led to the inconclusiveness of these results.

Materials and methods: In the present experiments, video clips with auditory/visual delays of ± 300 , ± 200 , ± 133 , ± 66 , and 0ms were presented to RW. RW had to decide on each trial whether the auditory- or visual-signal appeared to have been presented first. The video clips consisted of: a female British-English speaker uttering /aba/ and /aga/ and the bird's-eye views of a female's fingers playing the piano notes 'c' and 'f'. All video clips were 800ms long.

Results: Analysis of RW's data revealed the absence of any impairment in the temporal perception for either speech or nonspeech events. Specifically, RW's sensitivity to the asynchrony present in speech and music was 67ms and 70ms, respectively. These values are similar to those previously obtained for healthy participants [2]. Comparison of RW's data with controls revealed no differences [$F < 1$, n.s.], with control participants' sensitivity to asynchrony in speech and music being equal to 66ms and 76ms, respectively.

Conclusions: The methodological problems of previous testing could have led to RW being misdiagnosed. However, well-controlled experimentation revealed that RW's temporal percept was within the temporal limits of normal participants.

Acknowledgements

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S138

Mild cognitive impairment in relapsing-remitting multiple sclerosis

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Background: Cognitive dysfunction is common in multiple sclerosis (MS) and occurs in up to 65% of patients. Memory, attention, executive constructive functions are particularly impaired in the relapsing-remitting (RRMS) form of the disease.

Materials and methods: Case-control prospective study conducted in a clinical setting.

To investigate the cognitive functions of RRMS we carried out a neuropsychological evaluation of 31 patients with clinically

definite RRMS. Thirty individually pair-matched healthy controls with similar socio-demographic attributes were also evaluated. Selection criteria for patients included a minimum of general physical (EDSS < 3, I.A.D.L) and mental (M.M.S.E) ability. In addition, screening for possible depression (Hamilton scale), was performed. Neuropsychological tests which were performed for the overall evaluation of cognitive impairment included a battery specifically designed for MS and the STROOP test.

Results: RRMS patients performed worse than controls in most of the cognitive tests employed, particularly the Selective Reminding Test, Spatial Recall Test, Paced Auditory Serial Addition Test, STROOP ($p < .05$, controlling for multiple comparisons). Performance was generally inversely linked with disease duration, after controlling for age. No significant impact of other extraneous or intrinsic factors was detected.

Conclusions: RRMS patients performed within the mildly impaired range. Cognitive decline correlated with illness duration. This study emphasizes the importance of cognitive examination in clinical practice among MS patients. It may therefore be suggested that a complete neurological examination should include tests on memory and abstract reasoning.

S139

Psychiatric onset of multiple sclerosis

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Background: Although psychiatric dysfunctions are well recognized throughout the course of definite multiple sclerosis (MS), initial presentation of the disease with predominant psychiatric symptoms has rarely been reported.

Materials and methods: A detailed report of four cases of young women whose atypical first presentation of MS led to them being initially diagnosed with psychiatric diseases. Emphasis is placed on differential diagnosis and timely identification of similar cases.

Results: Four women (aged 30, 32, 33 and 38 years) out of 298 consecutive patients with definite MS, exhibited a psychiatric syndrome at initial presentation without other symptoms or signs suggestive for MS. Brain CT scans were normal. Three out of the four patients underwent psychiatric hospitalizations. Two of the patients were initially diagnosed with manic-depressive disorder, one with major depression and one with psychosis. MS diagnosis was delayed and established within one to eight years following the initial psychiatric presentation. All patients underwent brain and spinal MRI and brain SPECT. Patients fulfilled the recently revised McDonald diagnostic criteria of MS. Patients were followed for three to up to ten years thereafter. All of them gradually developed characteristic physical signs, with concomitant disabilities.

Conclusions: MS should be considered in the differential diagnosis of a psychiatric disorder even in the absence of typical neurological signs. Careful relevant clinical and laboratory

investigation as well as neuroimaging techniques should be performed, especially in cases of previously healthy young patients who present with atypical psychiatric manifestations. Early diagnosis may be particularly important in view of the emerging disease-modifying treatments.

S140 Psychophysiological effects of bathing in hot spring evaluated by EEG

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Background: Lots of Japanese have a habit to take bath with hot water over 40 degree centigrade almost every day. More than 3,000 areas of hot springs exist all over Japan and according to the survey of Japan travel bureau foundation, 90% of Japanese like to visit there as a recreation. It has been reported that bathing in hot water can augment blood flow and those kind of physical effects while taking bath have already proved by certain number of researchers. However psychophysiological effects in terms of bathing in hot water have not been seen yet. Yoshida et al have developed the HSK rhythms (FFR) in alpha waves measured by EEG could show the mood states. In this study, we investigate comfortableness when people take hot bath using this EEG method.

Materials and methods: EEG was performed in 22 participants (mean age = 48 - 18) before and after 10 minutes bathing in hot spring more than 40 degree centigrade. EEG was taken at right frontal head related to calmness and at left frontal head related to relaxation. Followed by Yoshida's method, comfort score was calculated to the range of 0 to 100 metric based on the slopes in the log power spectra of FFR.

Results: The slopes in the log power spectra of FFR calculated by EEG at FP3 increased from 0.32 to 0.46 and the one calculated by EEG at FP4 increased from 0.35 to 0.53 after bathing hot spring. "Comfort score" increased in 18 participants among 22 after bathing hot spring and average of "Comfort score" increased from 35 to 50.

Conclusions: The result suggests that bathing in hot water may contribute not only to physical effects but also psychological effects such as comfort and relief.

S141 Fractal analysis of dendritic arborization patterns of pyramidal neurons in human basolateral amygdala

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Background: It is well known that there is important role of amygdala in emotional-cognitive processes, i.e. in emotional and associative learning, fear acquisition and emotional memory [1].

We investigated dendritic branching patterns of pyramidal neurons which are believed to be excitatory. According to our earlier findings pyramidal neurons in human basolateral amygdala have two subtypes – pyramidal slender and pyramidal squat neurons [2]. Fractal analysis, which comes from Mandelbrot's fractal geometry [3], is used as a tool for differentiation of the complexity of neuronal dendritic branching patterns. The measure of dendritic branching represents the fractal dimension of the neuron. In performing this study, we have applied the fractal analysis to the images of neurons, in order to investigate its capability to distinguish between subtypes.

Materials and methods: The images of 14 Golgi-impregnated neurons were classified into two categories based on their somata and dendritic patterns – pyramidal slender and pyramidal squat subtypes. All images were analyzed with the box-counting method using public domain Image J software [4].

Results: Statistical analysis of the obtained data indicated that there was a significant difference ($p < 0.05$) between the calculated means of fractal dimensions between dendritic arbors of two subtypes – slender and squat pyramidal neurons.

Conclusions: This preliminary study of neuronal structure performed on pyramidal neurons of human basolateral amygdala suggests the utility both of fractal analysis and fractal dimension as a useful parameter of the complexity of dendritic structure and indicates their functional complexity.

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S142 Activity of peptidases in the central nervous system in experimental models of deprivation of sleep

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Background: Proteolytic enzymes are essential in the release and metabolism of neuropeptides. The neuropeptides are related in the regulation of the functions of the central nervous system (SNC), in particular in the regulation of the states of vigil and sleep. Currently, few studies on the expression and activity of proteolytic enzymes, EC 24.11, EC 24.15 and EC 24.16, they possess important paper in conditions of sleep deprivation.

Materials and methods: We establish methods of enzymatic determination in brain of rats (group privation sleep and control). The hydrolysis of fluorescence substrate was detected in espectofluorimetre adjusted for emission 320nm and excitement 420nm. The plate was kept in compartment (37. C). The

increase of fluorescence due the hydrolysis was registered and the values corrected for UAF/min/mg of protein. The sequences of hydrolysis was analyzed in system HPLC.

Results: Important alterations in the expression and activity of enzymes EC 24,11, EC 24,15 and EC 24. 16. The alterations are specific of functional structures of the SNC having increase or reduction in different regions (hippocampus and striatum).

Conclusions: From these evidences we will go to determine level of genetic expression and which alterations can be taken to the increase of the proteolytic activity. Using the methodology reaction in chain of polimerase in real time.

S143

Phonological spelling errors in the writing of Greek dyslexic children: in support of the phonological deficit theory

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Background: Developmental dyslexia is defined as the specific difficulty in the acquisition of reading and writing, within normal I.Q. range. One of the most dominant theories for the origins of developmental dyslexia is the one of the “phonological deficit hypothesis”. The aforementioned theory supports that a cognitive deficit affects the representation and processing of speech sounds.

Materials and methods: In the present research we examine the manifestation of this deficit within the framework of Modern Greek. 451 officially diagnosed (and at risk) dyslexic children’s writing samples of all levels of the primary school were analyzed and compared to 1.612 children’s writing samples of general school population.

The experimental material that was implemented is a subtest of the “Test Battery for the Assessment of Dyslexia in Greek (Zachos D. & Zachos I, 1998). More particularly, it was the Dictation-Spelling Task, which consists of six different texts, adapted to each one of the six levels-classes of primary school and examines several factors of spelling abilities. However, for the present research we shall present the results of the Phonological category.

The performance of each student is controlled by means of correct spelling.

Results: The results were analyzed quantitatively and can be summarized as follows:

- All the groups of dyslexic children achieved significantly low scores compared to the control groups
- Dyslexic children’s results were more deviant, contrary to the control groups, where the results were more homogeneous
- As the level increased dyslexic children’s performance was better but still significantly lower

Conclusions: The low performance of dyslexic children reveals the manifestation of phonological deficit in Greek and is compatible to the Phonological Deficit Theory of Developmental Dyslexia. The fact that these errors persist in the course of time implies the need for a more accurate diagnosis as well as for an effective treatment.

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S144

Fear state induced by diazepam withdrawal may be due to the sensitization of the neural substrates of aversion in the dPAG

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Background: In this study, we evaluated the effects of diazepam withdrawal [1] on the aversion promoted by the electrical stimulation of the dPAG [2], the influence of withdrawal on motor and attentional processes of withdrawn-rats - through the startle and prepulse inhibition tests, and the importance of the dPAG glutamate neurons in the modulation of this response [3].

Materials and methods: Wistar rats, 100-110 g, were used. Animals were submitted daily to 14 hours of water deprivation. At the end of this period diazepam was separately dissolved (10 mg/ml of saline plus propilenoglycol 5%) and offered to the animals, once daily during eighteen days, in a volume of 1ml/kg diluted in a solution of 2 ml of tap water added to sucrose (5%) plus propilenoglycol (5%). Surgeries were performed on day 15 and a cannula made by stainless steel needle (24G) was directed to the dPAG. Animals were tested at the last day or 48 hours after the last diazepam ingestion.

Results: Forty-hours of diazepam withdrawal elicit high levels of aversion in rats as revealed by the decrease on aversive thresholds and the enhance of the startle response. These aversive effects were blocked through antagonism of the NMDA glutamate receptors in the dPAG.

Conclusions: It is suggested that an enhanced neural activation of neural substrates of fear in the midbrain tectum, that involves glutamate, may underlie the aversive state elicited in diazepam-withdrawn rats.

Acknowledgements

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S145**Effects of physical activity on children's behavior**Spela Golubovic¹, Tatjana Tubic² and Gustav Bala³¹Faculty of Education, Sombor, University of Novi Sad, Serbia²Faculty of Education, Sombor, University of Novi Sad, Serbia³Faculty of Sport and Physical Education, University of Novi Sad, Serbia

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Background: This study was conducted to determine whether there is a correlation between organized physical activities and behavioral disorders in children.

Materials and methods: Sample consisted of 1831 children aged between 4 and 10 who responded to a Likert-type behavior-assessment questionnaire, as well as to a questionnaire on physical activity. Independent variables in this analysis are examinees' gender and age (preschool or elementary school beginner, depending on which institution examinees attended at a time of analysis).

Results: Results showed that children of preschool age are less involved in organized physical activities, and also that girls of all ages have a lower participation rate than boys in organized physical activities. Factor-analysis isolated four contributors to aberrant behavior in children: negativity, anxiety, lack of adjustment, and lack of established controls. Relation of these four factors to participation in physical activity was also analyzed. A structure of aberrant behavior points to a strong interconnection between neurobiological and cognitive mechanisms and socio-emotional aspects of behavior in children.

Differences in exhibition of socially incompetent behavioral modules in children included in physical activity, versus those that weren't, are most evident in following traits: stubbornness, unruliness, being spoiled, maudlin, as well as in being aggressive, grabbing toys, throwing things around and breaking them. Children engaged in physical activities also exhibit differences in behaviors that manifest anxiety.

Conclusions: The established correlation of factors leading to aberrant behavior and engagement in physical activity point to a prospect that by correctly choosing and directing physical activities, we can prevent behavioral disorders and contribute to children's mental health and well-being.

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S146**Depression, anxiety and various aspects of positive well-being in uncontrolled adults with Type 2 diabetes**

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Annals of General Psychiatry 2008, 7(Suppl 1):S146

Background: Psychological disorders and quality of life in diabetic patients has received much attention in the literature

[1, 2, 3, 4]. The aim of our study was to evaluate the prevalence of depression, anxiety and various aspects of positive well-being in uncontrolled adults with Type 2 diabetes.

Materials and methods: 72 out-patients with type 2 diabetes, aged 32-83 years old, 38 men and 34 women, completed the Hospital Anxiety and Depression Scale and the Well-Being Questionnaire, whilst waiting for their first diabetes appointment. Demographic characteristics, details of diabetes status and HbA1c were recorded. None of these patients was under psychological treatment or had previously consulted a psychiatrist.

Results: 62,5% of the patients reported either anxiety or depressive symptoms and 31,9% reported both. 20,8% of the patients reported mild anxiety and 23,6% moderate to severe anxiety, while 27,8% reported mild depression and 22,2% moderate to severe depression.

Women were more likely to report mild anxiety and moderate to severe depression, while mean WBQ positive well-being score was significantly higher in men ($p = 0,05$).

Duration of diabetes was positively correlated with WBQ depression score ($r = 0,306$; $p = 0,009$) and negatively correlated with WBQ energy ($r = -0,241$; $p = 0,041$), WBQ positive well-being ($r = -0,253$; $p = 0,032$) and WBQ total score ($r = -0,250$; $p = 0,034$). HbA1c was positively correlated with HADS anxiety score ($r = 0,239$; $p = 0,043$).

Conclusions: Prevalence rates of psychological symptoms in this uncontrolled diabetic population were high. Diabetes' duration was significantly associated with levels of depression and various aspects of positive well-being, while glycaemic control was related to levels of anxiety. Women reported higher levels of psychological symptoms. A considerable proportion of diabetics require psychological support, which, if available, might help improve glycaemic control and overall well-being.

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S147**Spiritual needs as experienced by Muslim patients in Iran: a qualitative study**Mansoor Karimollahi¹, Heidar Ali Abedi² and Alireza Yousefy³¹Ardabil Medical Sciences University, Ardabil, Iran²Faculty of Nursing & Midwifery, Islamic Azad University, Khorasgan Branch And Medical Education Research Centre (MERC) of Isfahan University of Medical Sciences, Isfahan, Iran

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Annals of General Psychiatry 2008, 7(Suppl 1):S147

Background: Until the last 2 decades, spiritual care was a vital, but invisible, aspect of nursing care. Spirituality and spiritual care have entered the mainstream, and the literature in this area has burgeoned. In addition, there is minimal information in the literature documenting the expressed spiritual needs of patients in general and specific subgroups of patients in particular, thus this article aimed to present spiritual needs of Iranian Muslim patients. Therefore, this study is of significance to nursing in general and to transcultural nursing in particular because of the high priority associated with increasing the nursing knowledge through research that investigates and describes care practices in diverse cultures.

This paper reports an investigation into the spiritual needs of hospitalized Iranian Muslim patients.

Materials and methods: Qualitative study with a sample of 24 patients using semi-structured interviews. The sample selected from three different cities of Iran.

Results: Although not clearly distinguishable, we found two main spiritual needs include religious and existential needs in Iranian Muslim patients.

Conclusions: With regard to holistic approach in Islamic philosophy, holism is a relevant concept in the care of Iranian patients.

S148

The stressors of nurses working in emergency units

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Background: The comparison of stresses between nurses and dentists depicts that nurses more than other professions are prone to stress and the rate of suicide in female nurses 5-6 times and in male nurses 2-3 times more than general population. Researches also shows that neurotic disorders like drug abuse and depression is more common in nurses. This study aimed to determine stressors of nurses working in emergency units.

Materials and methods: All of nurses working in emergency units of hospitals of Ardabil medical sciences university (n = 49) chosen for sample. The means of data collecting was questionnaire. Descriptive statistics used for data analysis.

Results: This study showed that the shortage an unavailability of necessary equipment (67.34%), patient's suffering (57%), patient's family interference with nursing care (53.06), shortage of nurses, unavailability of physicians in emergency situations, (51.12%) and working without adequate rest (42.17%) were the most important stressors of nurses working in emergency units.

Conclusions: In the sum, we can say that the most important stressors are the shortage and unavailability of necessary equipments. This is a management related factor so nursing managers can help to promote the nursing care quality using environmental changes.

S149

The stressors of nurses of critical care units

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Annals of General Psychiatry 2008, 7(Suppl 1):S149

Background: Critical care units are the most sensitive professional units of hospital, and one of the stressors in nursing profession is working in these units. Observing dying patients, doing more work, communicational problems and other environmental factors are the main problems of these nurses. This study was performed to recognition problems of nurses working in critical care units of Ardabil hospitals.

Materials and methods: This is a descriptive study. The study population was the all of nurses working in critical units of Ardabil hospitals, contains 48 nurses and all of them were selected for the sample. The mean for collecting data was questionnaire.

Results: In this study 46% of nurses mentioned that new experiences in profession is the first problem and not to being able for decision-making about living and dying of patients is the second.

Conclusions: Surely cognition of the problems of nurses that working with patient directly can decrease potential problems and increase quality and quantity of nursing care.

S150

Application of Clozapine to aggressive patients

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Annals of General Psychiatry 2008, 7(Suppl 1):S150

Background: Definitions. Aggression types. Therapeutic methods for coping aggression.

Assessment of the drug effect in aggressive patients with different nosological belonging.

Materials and methods: Three groups of patients /aggressive patients with schizophrenia, potentially aggressive patients with schizophrenia and aggressive patients with personal disorder/ age 18-60, without any significant somatic diseases, with diagnosis paranoid schizophrenia and personal disorder, are studied. Clozapine is applied in variable doses. A battery of psychological tests for aggression assessment is used. Personality evaluation was made by IPDE for patients with personality disorders. Diagnostic procedures included ICD-10 criteria.

Results: There is a considerable reduction of aggressive behaviour by fast dosage titration of Clozapine. The side effects affect significantly the patients' compliance.

Conclusions: It is observed a good compliance in low Clozapine dosage (under 100 mg.). We consider that the better compliance is also linked with a regular blood count providing therapeutic contacts with patients.

S151**The emotional experiences of elderly people living in nursing homes**

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Background: The promotion of health and economic status in all over the world resulted in increasing the older population. It's expected, at least 40% of the population over 75 years, need extensive health care services in the last parts of their lives. The rate of transferring the elderly to the nursing home is increasing in Iran too. Understanding elder's emotional experiences is important for living in nursing home and understanding why this relocation causes that elder views it as "final sign of failure" is important, because this perceptions and fears have negative effects on elder's adaptation in countering with this challenge. This study aimed to describe emotional experiences of elders living in nursing homes.

Materials and methods: The qualitative phenomenological approach and purposive sampling amongst elderly residents in private and governmental nursing homes in Esfahan city was applied. Sampling continued till data saturation and resulting sample size became 10 participants. The data was collected with in-depth interviews and field notes. Colaizzi's method was used for data analysis and the rigor was based on transferability and credibility.

Results: Three themes were extracted from the data (structural components of experience), including: 1- Residents' emotional experiences in nursing home life 2- Resident's emotional experiences at the entrance in nursing home. 3-Feeling of powerlessness.

Conclusions: In this study, older people have shown various emotions to relocation and residence in nursing homes. Every elder, with different context and different history in life, described its uniqueness experiences. In addition, pay attention to social, financial, health supports and mental, spiritual and physical needs of elders should be met through whole care, because only attention to physical needs of them, denies hopeful, meaningful and purposive life in nursing homes.

S152**Ziprasidone-induced hyperprolactinemia: a case report**

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Background: Among the second-generation antipsychotics, ziprasidone seems to be less frequently associated with

hyperprolactinemia. A MEDLINE search (2002-2006) revealed three cases of ziprasidone induced hyperprolactinemia. We describe the case of a patient in whom ziprasidone induced clinically significant hyperprolactinemia.

Materials and methods: Ms. A, a 22-year old woman, had a 1-year history of paranoid schizophrenia with delusions and auditory hallucinations. Four months ago, she was treated with ziprasidone 80mg/day. On day 7, the ziprasidone dose was increased to 160 mg/day, because of insufficient suppression of her psychotic symptoms.

Results: After 5 weeks of ziprasidone treatment, the patient reported significant improvement of psychotic symptoms. However, she complained of galactorrhea, breast tenderness and amenorrhea. Magnetic resonance imaging (MRI) of the head showed no pathology, but her prolactin levels were increased to 47.4 ng/ml. Ziprasidone was discontinued and 3 days after, the patient's prolactin levels were decreased to 3.7 ng/ml and 2 weeks after clinical side effects disappeared.

Conclusions: To our knowledge, this is the fourth case of ziprasidone-induced clinically significant hyperprolactinemia. In this respect, the clinicians' awareness and the monitoring of prolactin level are required.

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S153**A new dichotic listening paradigm in schizophrenia: relationship to focused attentional functioning**

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Background: Classical dichotic listening is a method for studying auditory laterality and consequently basic sensory processing. Nevertheless, by adding instructions about which ear to attend (forced condition), it is possible to also test controlled information processing. Specifically, the forced-right condition would reflect the capacity to focus attention, while the forced-left condition can be explained additionally as a result of inhibitory control over a stimulus-driven effect, since the latter paradigm also involves response conflict. The purpose of the present study was to examine the relationship between the two forced conditions and a test of sustained and focused attention.

Materials and methods: Thirty patients with schizophrenia (SCH) were assessed twice: on their hospitalisation and right before leaving hospital. Attention was measured by a dichotic listening task of simple words (DLT), under two conditions: forced right-ear (FRC) and forced left-ear (FLC) condition (wherein subjects were instructed to focus attention only on the right- or left-ear stimulus, respectively), yielding two measures: number of words repeated from the target ear minus number of words repeated from the opposite ear, respectively. Sustained-focused attention was measured by the Penn Continuous Performance Test (PCPT). In this computerized task, the subject is asked to respond to a set of vertical and horizontal lines whenever they form a digit. An efficiency measure (i.e., the ratio of number of correct responses per unit time for each participant, calculated by dividing the number of true positives by the average reaction time on correct responses) was used as an index of performance.

Results: Performance on the PCPT correlated significantly with performance on both conditions of the DLT, and at both testing times [1st time: PCPT - FRC: $r = .525$, $p < .003$, PCPT-FLC: $r = .564$, $p < .001$; 2nd time: PCPT - FRC: $r = .379$, $p < .03$, PCPT - FLC: $r = .562$, $p < .001$].

Conclusions: In conclusion our results suggest that both forced condition paradigms of a dichotic listening test tap into aspects of focused attention.

S154

Verbal processing in patients with bipolar disorder during a manic episode

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Background: Dichotic listening tests have been used to study cerebral lateralization for language and thus the functional integrity of the left temporal lobe. The aim of the present study was to investigate dichotic listening performance, as well as the impact of acute symptom improvement on performance, in a group of Greek patients with bipolar disorder during a manic episode.

Materials and methods: Participants were 20 patients with a DSM-IV diagnosis of bipolar disorder during a manic episode and 22 healthy controls matched on age, education and gender ratio. Participants were assessed with a computerized dichotic listening task presenting fused simple words, a presumed measure of lateralized temporal lobe language processing. The examinees were instructed to repeat the words they had just heard without any other specific instruction. The variable of interest was the total number of the words reported correctly separately for each ear; when both words were repeated, only the first one was counted as correct. Both groups were evaluated twice within an interval of approximately 4 weeks; patients underwent clinical and neuropsychological assessment at the beginning and again at the end of their hospitalization (mean duration: 26.5, SD: 11 days).

Results: Repeated measures analyses of variance revealed a significant main effect only for Group [$F(1,40) = 42.81$, $p < 0.001$], with the manic patients reporting fewer correct words than the healthy comparison group, but neither for Ear [$F(1,40) = 0.31$, $p = 0.58$] nor for Time of testing [$F(1,68) = 2.45$, $p = 0.13$]. We found no significant interaction between Group x Ear [$F(1,40) = 2.56$, $p = 0.18$], Group x Time [$F(1,40) = 0.35$, $p = 0.56$], or Group x Ear x Time [$F(1,40) = 1.59$, $p = 0.21$].

Conclusions: Patients with bipolar disorder during a manic exacerbation showed an attentional deficit, which remained consistent even after substantial symptom improvement.

S155

Anhedonia in patients with borderline personality disorder: the efficacy of cognitive-analytic therapy (CAT)

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Background: Anhedonia is recognized as one of the core symptoms of depression but it is also seen in other mental disorders. Cognitive-Analytic Therapy (CAT) is a type of brief psychotherapy which has been proven efficacious for patients with various psychiatric diagnoses. The present study aims to: 1) Investigate the presence of anhedonia in patients with borderline personality disorder (BPD) 2) Evaluate the CAT outcome on anhedonia, depression and anxiety of these patients.

Materials and methods: The sample of the study consisted of 57 patients, who attended the Mental Health Center of N/W district of Thessaloniki and received a diagnosis of BPD or personality disorder NOS with predominant borderline personality traits according to DSM-IV criteria. These patients completed a 16-sessions of CAT and attended a 2-month follow up. The Beck Depression Inventory (BDI) and the State-Trait Anxiety Inventory (STAI) were used as evaluation instruments both at the intake and at the follow up time. Anhedonia was tested by the relevant question of BDI.

Results: At the 2-month follow-up, the patients showed a statistically significant improvement on BDI total score, on the anhedonia sub-scale score, as well as on the state and trait scores of the STAI, compared to the intake ($p < 0.001$). Furthermore, significantly fewer patients were still anhedonic (18/39 vs 50/57, $\chi^2 = 37.32$, $p < 0.001$) in comparison to pre-therapy evaluation. Finally, patients with BDP only ($N = 21$) and those with BDP and an additional axis-I diagnosis, except a depressive disorder ($N = 11$) had a lower score on anhedonia compared to BDP patients with an additional depressive disorder ($N = 25$). However, the difference showed only a tendency for statistical significance ($p < 0.1$).

Conclusions: CAT is an effective psychotherapeutic approach in reducing anhedonia in patients with BDP. The improvement of anhedonia comes into the line with the amelioration of anxiety

and depressive symptoms. Anhedonia is a core symptom of a depressive disorder but it is also seen, not infrequently, in patients BDP.

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S156

The impact of symptom improvement on verbal processing in patients with schizophrenia

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Background: Dichotic listening techniques have been used to study hemispheric dominance for language, and thus the functional integrity of the left temporal lobe, in schizophrenia. Several studies have revealed a smaller right ear (left hemisphere) advantage for patients with schizophrenia compared with healthy subjects. The aim of the present study was to investigate changes in dichotic listening performance after acute antipsychotic treatment in a group of Greek patients with schizophrenia.

Materials and methods: Participants were 36 patients with a DSM-IV diagnosis of schizophrenia and 35 age- and gender-matched healthy controls. Participants were assessed with a computerized dichotic listening task with use of fused simple words, presumably a measure of lateralized temporal lobe language processing. The examinees were instructed merely to repeat the words they had just heard. The variable of interest was the total number of the words reported correctly separately for ear; when both words were repeated, only the first one was counted as correct. Both groups were evaluated twice within an interval of approximately one month; patients underwent clinical and neuropsychological assessment at the beginning and again at the end of their hospitalization (mean duration 33.4, SD: 17.8 days).

Results: Repeated measures analyses of variance, after controlling for level of education, revealed a significant main effect for Group [$F(1,68) = 33.96$, $p < 0.001$], with schizophrenia patients reporting fewer correct words than the healthy comparison group. There was also a significant main effect for Ear [$F(1,68) = 5.23$, $p = 0.025$] (more correct items were reported from the right ear) but not for Time of testing [$F(1,68) = 1.84$, $p = 0.18$]. There was also a marginally significant two-way interaction of Group x Ear [$F(1,68) = 3.18$, $p = 0.08$], but not for Group x Time [$F(1,68) = 0.39$, $p = 0.54$]. Patients with schizophrenia reported fewer correct words from the right ear, [$t(69) = 3.19$, $p = 0.002$], but not from the left ear [$t(69) = 0.96$, $p = 0.34$], compared to the control group. Finally,

the three-way interaction Group x Ear x Time [$F(1,68) = 0.40$, $p = 0.84$] was not significant.

Conclusions: Patients with schizophrenia displayed a marginal absence of the expected right ear advantage in comparison with the healthy control group, whereas the latter group clearly showed this right ear advantage. Significant improvement in symptom ratings (positive symptoms, negative symptoms or general psychopathology) did not correlate with performance on dichotic listening in the patient group, suggesting that reduced functional laterality in schizophrenia is independent of clinical status.

S157

Study of the association between MMPI and alcohol addiction type

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Background: It is known that alcohol addiction is a multi-dimensional and extensive public health problem. Apart from many other parameters, the psychological factors and the type of dependence it is decisive for the therapeutic intervention and relapse prevention.

To evaluate the clinical profile of alcohol depended patients as derived from the MMPI subscales, and various parameters associated with alcohol dependence.

Materials and methods: 35 alcoholic patients (28 men and 7 women) which were admittred for alcohol detoxification and fulfilled DSM-IV criteria for dependence completed the MMPI, their demographic details were recorded, as well as family history for alcohol addiction, type of alcoholism, years of use and years of abuse of alcohol.

Results: The average age was 43,4 years \pm of 8.1 and the years of education 10,7 \pm 3,1. The average years of use were 20,08 \pm 9,10 and the average years of abuse were 8,03 \pm 6,31. For the whole sample the males surpassed the females in both parameters. Marital status: (28,6%) were single, (37,1%) married and (34,3%) divorced. There was negative family history for alcohol addiction in (57,1%) patients and (42,9%) had positive. Type of alcoholism: In (80%) it was type I and (20%) had type II. MMPI results: higher was the scale of psychopathy with an average 94,03 \pm 16, and the second scale schizophrenia with average 85,20 \pm 15,54. In the women the value in the introversion scale was smaller (44,28 vs 53.79 t test $p < 0.05$). Patients (single and divorced) presented higher values in the scale of depression(65,77 vs 57,15 t test $p < 0.05$). Positive heredity and the type of dependence did not differentiate the sample. The time of use was positively correlated with the Hypochondriasis, Depression, Histrionic as well as thee scales of Paranoia and Psychasthenia. The time of abuse was correlated with the psychasthenia scale (Spearman test $p < 0.05$).The indicators of validity were within acceptable levels. The time of abuse was greater in the men that in the women.

Conclusions: The scale of psychopathy, as well as schizophrenia is high, even if the last one should be often considered as a component of anxiety event and not referring to genuine psychotic characteristics. However, it is established that the psychotic patients have increased abuse of alcohol. The scale of depression is increased in single and divorced patients and this finding is compatible with the increased frequency and severity of dependence in these groups. The study is found in development for the evaluation of also rests of parameters.

S158

The efficacy of Cognitive-Analytic Therapy (CAT) on anhedonia in patients with Obsessive-Compulsive Personality Disorder

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Background: Anhedonia is recognized as one of the key symptoms of depression but it is also seen in other mental disorders. Cognitive-Analytic Therapy (CAT) is a type of brief psychotherapy which has been proven efficacious for patients with various psychiatric diagnoses. The present study aims to: 1) Investigate the presence of anhedonia in patients with obsessive-compulsive personality disorder (OCPD) 2) Evaluate the CAT outcome on anhedonia, depression and anxiety of these patients.

Materials and methods: The sample of the study consisted of 64 patients, who attended the Mental Health Center of N/W district of Thessaloniki, received a diagnosis of OCPD or personality disorder NOS with predominant obsessive-compulsive personality traits according to DSM-IV criteria and for whom it has been decided to be treated with CAT. The Beck Depression Inventory (BDI) and the State-Trait Anxiety Inventory (STAI) were used as evaluation instruments on a follow up, 2 months after therapy termination. Anhedonia was tested by the relevant question of BDI.

Results: Forty-five patients completed therapy and attended the follow-up. They showed a statistically significant improvement on BDI total score, on the score of the anhedonia subscale, as well as on the state and trait scores of the STAI, compared to the intake ($p < 0.001$). Furthermore, significantly fewer patients were still anhedonic (13/45 vs 38/45, $\chi^2 = 25.31$, $p < 0.001$) in comparison to pre-therapy evaluation. Finally, patients with OCDP only ($N = 11$) and those with OCDP and an additional axis-I diagnosis, except a depressive disorder ($N = 15$) had significantly lower score on anhedonia compared to OCDP patients with an additional depressive disorder ($N = 19$) ($p < 0.01$).

Conclusions: CAT is an effective brief psychotherapeutic intervention in reducing anhedonia in patients with OCDP. The improvement of anhedonia comes into the line with the improvement of the whole clinical picture of the patients.

Anhedonia is a core symptom of depression but it is also seen in patients with other psychological problems, as OCDP.

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S159

Differential effects of sentence context on lexical ambiguity resolution in different subgroups of patients with schizophrenia

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Background: It has been suggested that a failure in the processing of context information may account for the heterogeneous manifestations of schizophrenia. In a previous study, we have shown that patients with schizophrenia were impaired in their ability to use sentence context during lexical ambiguity resolution. The most striking patient deficit appeared in sentence contexts related to the dominant (i.e. more frequent) meaning of homonyms; however, this deficit was present in only 50% of patients. The present study aimed to investigate priming patterns in patients with normal (NP) and reduced (RP) priming of dominant targets following dominant sentence contexts.

Materials and methods: A cross-modal priming lexical decision task was used. Thirty noun-noun equibased homonyms were embedded in sentence contexts that created a bias towards the dominant subordinate or neither meaning of the homonym (experimental sentences). Control sentences were constructed by replacing the final homonym of each sentence with a control word (selected to form a plausible completion to all contexts), while keeping all other elements of the sentence identical. Visual targets were associates of the two meanings of each ambiguous word and appeared after an interstimulus interval of 0 msec. Participants were 14 patients with schizophrenia (7 NP, 7 RP) and 14 healthy controls, matched on age, sex, education and parental education.

Results: The use of sentence context for ambiguity resolution was impaired in both patient groups. NP patients showed significant priming (i.e. a statistically significant acceleration of reaction times in experimental in comparison to control sentences) only for dominant targets following dominant sentence contexts (subject analysis $p < 0.001$, item analysis $p = 0.03$), but no priming for either target type following subordinate or unbiased contexts (all $p > 0.1$). RP patients, on the other hand, exhibited priming for both target types following unbiased sentence contexts (dominant targets: $p = 0.02$,

$p_2 < 0.001$; subordinate targets: $p_1 = 0.01$, $p_2 = ns$); this group also showed (marginally) significant priming for subordinate targets following subordinate sentences ($p_1 = ns$, $p_2 = 0.07$), but no priming for dominant targets at dominant contexts. Although the pattern of results suggested the presence of disturbances both in the organization of the semantic network and in extralexical cognitive processes in both patient groups, the type of disturbance was clearly different in each group.

Conclusions: Although the concept of "context" is useful for the integration of schizophrenic deficits into a unifying theoretic framework, the underlying disturbances may be quite variable. Further studies are warranted to investigate any relations with clinical variables or neuropsychological performance.

S160

Impaired use of sentence context in patients with schizophrenia: a review

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Background: It has been suggested that several of the heterogeneous manifestations of schizophrenia could be dependent on a specific impairment in the representation and maintenance of context information. In the domain of language, a number of studies have shown disordered use of single-word contexts in patients with schizophrenia; however, natural language comprehension generally involves longer sequences of words, such as sentences. The aim of the present study was to review findings regarding the use of sentence context in schizophrenia.

Materials and methods: A MEDLINE search was performed to retrieve studies that have investigated the use of sentence context in patients with schizophrenia. The keywords "sentence", "context" and "schizophrenia" were used; moreover, the references section of the retrieved papers was searched for similar studies.

Results: A total of 17 studies were traced. Patients with schizophrenia were invariably found impaired in their ability to benefit from sentence context. However, no single mechanism can unequivocally account for this deficit. There is evidence in favor of impairments both in the construction of a sentence context representation and in the use of the latter to guide lexical processing. Moreover, findings are inconclusive as to whether the reported disturbances reflect impairments in lexical or extralexical processes. These divergent findings can be explained if one assumes that the deficit is not unitary, and that various aspects of context processing are differentially affected in different patients; indeed, this view has received support by more recent studies.

Conclusions: The impaired use of sentence context in patients with schizophrenia appears to reflect disturbances in various levels of processing, which are possibly differentially affected in different patients.

S161

Exploring recognition of affective prosody in patients with remitted depression:

how do they differ from healthy participants?

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Background: Deficits in recognizing emotional states in others have been observed in several psychiatric and neurological disorders. Findings from studies examining emotion processing in depressed patients, however, have been inconsistent. Moreover, the indications of a generalized or a specific emotion recognition impairment have been controversial. Thus, the purpose of the present study was to explore emotion recognition, and, specifically, affective prosody recognition, in a sample of depressed patients in remission.

Materials and methods: Seventeen patients with remitted depression (RD) and 20 healthy controls (HC), matched on age and education, were assessed with an affective prosody test (APT). In this test, 30 audiorecorded sentences of emotionally neutral content (e.g. "John is studying") were presented with prosodic intonation portraying one of the basic emotions (happiness, sadness, surprise, fear, anger, as well as neutral) with five examples of each emotion.

Results: Independent samples t-tests revealed no group main effect, either on their overall performance on the APT [$t(35) = .611$, $p = .545$], or on any particular emotion [happiness: $t(35) = 1.579$, $p = .087$; sadness: $t(35) = -.317$, $p = .753$; surprise: $t(35) = -1.006$, $p = .321$; fear: $t(35) = 1.204$, $p = .237$; anger: $t(35) = -1.124$, $p = .268$; neutral: $t(35) = -1.262$, $p = .215$]. For the patients, the rank order of the six emotions from the highest to lowest mean score was as follows: neutral intonation, anger, surprise, happiness, sadness, and fear, while for the healthy participants it was as follows: neutral intonation, happiness, fear, surprise, anger and sadness.

Conclusions: Although the two groups did not differ in their overall performance, patients with remitted depression showed a different pattern of emotion recognition, suggesting subtle deviation in the mode in which they identify emotional states. A larger sample of patients should be assessed, however, in order to strengthen the validity of our conclusion.

S162

Neuropsychology and psychiatric effect of epilepsy on patients quality of life: a comparative short term study

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Background: Person suffering from epilepsy usually becomes more withdrawn, depressed and Cognitive function is more

frequently impaired in people with epilepsy than in the general population, and the degree of cognitive impairment varies according to the epilepsy syndrome.

Materials and methods: Behavioral disorders are also more frequent in people with epilepsy than in individuals who do not have epilepsy. Behavioral disturbance is seen more commonly in people with refractory epilepsy due to organic brain diseases, epilepsy syndromes, drugs nonresponsive epilepsy, and epilepsy due to metabolic channelopathies. The various epilepsy syndromes of childhood and adolescence differ greatly in terms of cognitive and behavioral outcome. In Childhood Lennox gastaut syndrome, West Syndrome, Juvenile Myoclonic epilepsy, and In Adult Temporal Lobe epilepsy usually have mood, cognitive and behavior problem. Behavior problem can manifest any time before or after diagnosing epilepsy.

Results: Conditions in which behavioral and cognitive disorders may be associated with epilepsy include depression, psychosis, anxiety, and attention deficit. the cognitive and behavioural outcome of epilepsy syndromes can be dealt by effective treatment with either antiepileptic medication or surgery.

Conclusions: The educational and social impairments associated with the epilepsy syndromes of childhood and adolescence are of major importance to study and to improve quality of life in person having epilepsy.

S163

Postpartum cultural practices: a systematic review of the evidence

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Background: This review identifies common rituals across cultures associated with the postpartum period and the evidence for either a positive or negative effect on maternal mental health.

Materials and methods: MEDLINE, CINAHL, PsychINFO, EMBASE, Proquest, and the WHO Reproductive Health Library were searched (1966 to July 2006) for qualitative and quantitative studies that focused on traditional practices and rituals in the postpartum period (i.e. within the first year following childbirth). The first review identified commonalities across cultures and the second review examined postpartum practices and their relationship to postpartum psychiatric illness.

Results: The first review resulted in over 44 articles being evaluated. Common themes exist across cultures and include: Organized support, rest period, restricted activities, hygiene practices, diet, infant care, breastfeeding, childbirth ceremonies, naming the infant, and practices to promote health. Eleven studies met the inclusion criteria for the second review. Data were identified relating to 1) organized support, 2) diet, and 3) other or multiple postpartum practices and organized according to evidence for or against a protective effect.

Conclusions: As Canadian society is multicultural, it is important for clinicians to be cognizant of common cultural practices and the perceived consequences of not observing them. These practices can both facilitate perinatal healthcare and impede it in unknowing clinicians. Although common rituals exist, the limited research on the relationship between postpartum rituals and PPD does not clearly answer the question as to whether these practices actually decrease or increase the risk for PPD.

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S164

Psychiatric trainees attitudes towards EUTHANASIA

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Background: In Greece, which has one of the lowest rates of suicide, euthanasia (EUT) and physician assisted suicide (PAS) are illegal and punishable criminal acts. Attitudes towards EUT and PAS among psychiatric trainees are scarce. We investigated the attitudes towards EUT and PAS of Greek psychiatric trainees (PT) and compared that to those of other medical trainees (OMT).

Materials and methods: To access attitudes towards EUT and PAS we translated, adapted and modified, in a short version, the questionnaire developed by Ganzini et al (1996). 120 psychiatric trainees and 154 trainees of other medical specialties completed the questionnaire.

Results: 51.6% of the PT and 33.4% of the OMT were for the acceptance of EUT ($p < 0.001$) while 82.5% of the PT and 75.9% of the OMT were for the acceptance of PAS under some circumstances ($p < 0.04$). 69.2% of the PT and 82.4% of the OMT influenced on the issue of PAS by the risk that PAS might be misused with certain disadvantaged groups ($p < 0.04$). 60.8% of the PT and 48.7% of the OMT believe that there will be sufficient legal safeguards regarding the legislation of EUT ($p < 0.05$). 39.2% of the PT and 59.1% of the OMT believe that legalization of EUT may be a risk for the legitimate everyday medical practice ($p < 0.001$).

Conclusions: A great proportion of both PT and OMT were for the acceptance of EUT and PAS under some circumstances.

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SI65**Neuroemotional configuration of the drug addict**

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Background: The psychobiology studies on the dependence on narcotic drugs have been showing a group of changes on the cerebral functioning.

However, it hasn't been any studies over the neuro emotional structure of drug addicts.

This work aims to warp, in a certain way, those flaws and examine thoroughly our knowledge about neuro emotional structure of this population.

Materials and methods: We made an experimental study on the laboratory in psychophysiology terms, which consisted on the observation of movie scenes with pleasant and unpleasant contents about drugs and crime.

We appraised the Psycho-physiological and emotional reactivity of a group of drug addicts (N = 35) having as a reference a group for control (N = 30) matched by independent (individual) variables.

Results: The drug addicts have been differentiated from the group of control because they present a high level of emotional activation in what concerns the effects caused by the independent variable: drug.

In Psycho-physiological terms, they present a hyperactivity of the activator system of behaviour.

Conclusions: Drug addicts present a specific pattern of emotional activation interconnected with a pattern of psycho-physiological activation, also specific, whose average is got through process of attribution of meaning.

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SI66**Cross-Correlation arterial pressure the moment of acute phase with the Haemorrhagic Transformation of acid ischemic cerebrovascular disease**Konstantinos Karakousis, Konstantinos Karamitsos, Argiroula-Vasiliki Karadonta and Ioanna Karadonta
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Background: In individuals with hypertension vascular the 80% of vascular cerebral episodes are ischemic.

Aim of our study was the correlation of the increased arterial pressure during the acute phase of cerebrovascular disease with the following hemorrhagic transformation of ischemic emfract.

Materials and methods: We studied 150 patients (80 women and 70 men) with average age of 72 years who were hospitalized during the period of 2004–2006 for ischemic cerebrovascular disease and high arterial pressure during the acute phase of cerebrovascular disease. In all the patients we recorded arterial pressure the moment he arrived and they underwent CT in less than < 24 hours from the appearance of the symptoms as well as a week later so as to find the existence of haemorrhagic transformation.

Result: The medium arterial pressure the moment of his arrival was 175/110 mmHg and for this reason the patients did not undergo in antithrombotic treatment. In the total of patients a haemorrhagic transformation was observed in (35%) from whom the (33%) had haemorrhagic emfract and the (2%) cerebral haematoma. In these patients the systolic AP of arrival was an average 185/110 while in the 78% we found absence of antihypertensive treatment.

Conclusions: In the patients with ischemic cerebrovascular disease there is positive correlation between the increased systolic arterial pressure and the consequent haemorrhagic transformation in patients with acid ischemic emfract.

SI67**Migraine and cardiovascular risk factors**Konstantinos Karakousis, Konstantinos Karamitsos, Argiroula-Vasiliki Karadonta and Ioanna Karadonta
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Background: The migraine constitutes the most usual periodical kind of headache a partial localisation which can begin in the adolescent age.

The aim of our study was to see the cardiovascular profile of these patients.

Materials and methods: We studied 89 individuals with migraine (47 women and 42 men) from whom 35% with aura (MA), 63% without aura (MO), and 2% unclassified. In them we studied cardiovascular risk factors such as: blood pressure (BP), serum total and high - density lipoprotein cholesterol, smoking, oral contraceptive use, and the family background of coronary illness.

Results: In the patients without aura (MO) we observed the habit of smoking in the 52%, increased arterial pressure (systolic BP > 140 mmHg or diastolic BP > 90 mmHg) in the 35%, lack of regular natural activity in 39%. The individuals report that experience intense stress on their daily life in the 72%, hypertriglycemia in the 45%, HDL cholesterol serum under 40 mg in 36%, family record of coronary illness in the 12% obesity in the 16%, 33% of women make use of contraceptives. In the patients with aura (MA) we realised the habit of smoking in 59%. They have increased arterial pressure (systolic BP 140 mm Hg or diastolic BP > 90 mm Hg in 28%, lack of regular natural activity in the 41%, intense stress in the daily life is reported in the 75%, family historical background of coronary illness in the 12%, hypertriglycemia in the 50%, HDL cholesterol serum under 40 mg in the 36%, obesity in the 18%, 35% of women of this team make use of contraceptives.

Conclusions: Patients with migraine constitute a team of patients with increased cardiovascular risk.

S168**The cognitive impact of Electroconvulsive Therapy (ECT)**

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Annals of General Psychiatry 2008, 7(Suppl 1):S168

Background: Since its first use in 1938, ECT has been used to treat a number of acute psychiatric disorders, particularly major depression. It is widely considered the most effective anti-depressant treatment, with medication resistance its leading indication [1]. However, user and carer organisations still remain sceptical [2] largely because our understanding of short and long-term cognitive impairment is limited.

Materials and methods: A battery of neuropsychological tests and questionnaires were selected to include both objective and subjective memory measures. These tests were conducted on ECT patients, before treatment, after 4 treatments, within the week after the final ECT, at 1 month and 6 months, to measure the short and long-term cognitive impact of ECT.

Results: 1. Patients generally self-rated their memory functions as significantly improved after a course of ECT.
 2. Delayed recall of paired words and short story were sensitive to the adverse cognitive effects of ECT.
 3. Spatial Recognition Memory was impaired after ECT.
 4. Personal Semantic and Autobiographical Memory for recent events was significantly impaired by ECT.
 5. Memory deficits had generally resolved 1 month after ECT.

Conclusions: Cognitive deficits were detected during and within the week after a course of ECT. These deficits were generally not detected 1 month post ECT; however impairments in autobiographical memory for recent events surrounding ECT remain.

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S169**Frontal functioning alterations in chronic hepatitis C virus infected patients**

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Background: The neuropsychological implications of severe liver dysfunction have been widely discussed in recent

neuropsychological literature. However, research has only just begun on the harmful effects of mild liver dysfunction on neurocognitive processes, as well as the direct action of the hepatitis C virus (HCV) on the central nervous system. The purpose of this study was to investigate the possible existence of alterations in the executive functions of HCV patients.

Materials and methods: The executive functions were assessed by the administration of the two tests batteries related to the frontal lobe functioning; the Behavioural Assessment of the Dysexecutive Syndrome and the Wisconsin Card Sorting Test, to a group of HCV patients (n = 20) and to a control group (n = 20).

Results: The obtained results suggest the presence of impaired capability to inhibit previous associations and to use feedback in order to correct behaviour in the HCV group. Structured planning, conceptualization, organized search, attention supervision and control in non routine tasks and maintenance of a non automatic response, are other impaired aspects in these patients.

Conclusions: These results were not related to the degree of liver fibrosis, suggesting direct action of the hepatitis C virus on the frontal lobe.

Acknowledgements

Cespu, srl.

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S170**Recidivant criminal behaviour and executive dysfunction**

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Background: To experimentally test the hypothesis according to which recidivist subjects in non-violent criminal behaviours display an executive deficit, having alterations on prefrontal functioning as neurophysiological substrate.

Materials and methods: We applied the Behavioural Assessment of the Dysexecutive Syndrome (BADS) - a battery of assessment of the executive dysfunctions - to an experimental group of 30 male inmates who were recidivist in crimes against property (age = 39,3; s.d. = 9,98), and to a group of 30 male controls (age = 32,7; s.d. = 11,8), all Caucasian.

Results: Compared to controls, recidivist inmates performed worse in most of the subscales and showed a lower global score, suggesting defective executive functioning.

Conclusions: Avoiding the idea of a frontal “criminogenesis”, and despite the fact that both samples are not very large, the authors seek to present a possible interpretation for certain forms of persistent criminal behaviour, particularly when criminals are resistant to penal measures, in the frame of a defective control over conduct and its consequences.

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S171

Quality of life geriatric patients

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Background: The geriatric population constitutes 18% of the population of our country.

Aim of our study was to study the quality of life of elderly individuals.

Materials and methods: Constituted 234 patients from which 60% were women and 40% men of average age of 75 years.

Results: 8% suffered from psychiatric diseases, 35% from diseases of the cardiovascular system, 18% from diseases of the respiratory system, 22% from malignant diseases, 7% from inflammatory diseases, 7% endocrine diseases and 3% from various other diseases.

Conclusions: Old age is the time of the downfall of the individual which begins with the decrease of the bodily functions, in the 92% of patients there hardly exists an explicit medical problem and, in the 8% it concerns psychiatric disturbances, and there should be particular sensitisation towards geriatrics patients.

S172

Prevalence of mental disorders among women after delivery

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Background: Much research has shown that prevalence of mental disorders in women were higher than men and physical and environmental changes along with stresses resulting from delivery could rise the possibility of mental disorders.

Materials and methods: Based on the prevalence of mental disorders in previous researches and ten percent of possible decrease, 422 women who had referred to mental health centers for vaccination were selected and responded to the SCL90-R test. The relationship among the various scales of the test based on age, education, delivery style, delivery order and economic status were examined. According to a cut of point of 40, the suspected cases were referred to a psychiatrist.

Results: The results show that the most prevalent mental disorders was depression, Depression with economic status, delivery style, delivery order and duration after delivery, anxiety with age, delivery style, delivery order and duration after delivery, phobia with delivery order and duration after delivery, aggression with duration after delivery were related ($P < 0.01$).

Conclusions: Considering the prevalence of mental disorders, especially depression, it is necessary for mothers to be protected, trained and cared particularly three months after delivery.

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S173

Gender differences in the perceptions for the ideal sex partner

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Background: How accurately do men and women perceive the preferences of the other gender? Researchers have long been interested in interpersonal perception within relationships. McGuirl & Wiederman [1] found that men and women under- or overestimated the ratings of the other gender with regard to several characteristics.

Materials and methods: The aim of the current study was to investigate the gender differences in preferences for particular characteristics of an ideal sexual partner, and also to search the degree men and women accurately estimate the preferences of the other gender. A sample of 289 men and 137 women, (age: 22–25) completed a questionnaire [1], about what they believed the ideal sex partner's characteristics were, as well as what they thought the other gender would answer to the same set of questions.

Results: Relative to women, men valued more highly the preference of a sex partner who is physically attractive, experiences orgasm easily, and likes erotic videos or books. Women, more highly valued the preference of a partner who is knowledgeable about sex and takes the dominant role during sex. The comparison between men's reported preference and women's rating regarding what they thought men prefer,

showed that women overestimated the degree to which men like a partner saying compliments during sex, and like erotic videos and books. The comparison between women's reported preferences and men's rating regarding what they thought woman prefer, showed that men underestimated women's preference for a partner who clearly communicate desires, and experience orgasm easily.

Conclusions: The findings of the present study can be discussed in relation to previous findings which have shown in general that, compare to men, women seem to desire more nongenital expressions of affection as well as romantic settings for sexual activity. Finally, the findings may have implication in sexual counseling or education.

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S174

Transcultural issues about death fantasies and beliefs

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Annals of General Psychiatry 2008, **7(Suppl 1)**:S174

Background: The aim of the research was to explore what kind of beliefs and fantasies about death and dying exist in suicide attempters in a Greek group of patients and whether there are differences or similarities with attempters of other cultural origin/background.

Materials and methods: Our data comes from 32 interviews occurring during a one-year period with Greek patients who were seen within 24 hours of a suicide attempt and after admission at the casualty department of a Greek general hospital. At the end of the assessment the patient was asked to give a suicidal fantasy and speak about his thoughts and beliefs around death.

Results: A suicidal fantasy always included a dyadic relationship between a part of the self which will survive ("surviving self") and the body, which was identified with a part of the self which had to be killed ("destruction of the body"). Suicidal fantasies took four forms: revenge, self-punishment, merging and elimination - annihilation fantasies.

Conclusions: Transcultural issues about death fantasies and beliefs of suicide attempters are discussed.

It is suggested that exploration of a suicidal fantasy and the cultural elements which are involved can play a significant role in gaining a better understanding of the psychological conflicts of the attempters and can be used in the psychotherapeutic treatment which usually follows.

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S175

A prospective observational study of the safety and effectiveness of intramuscular psychotropic therapies in patients who are acutely agitated: Greek cohort results

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Annals of General Psychiatry 2008, **7(Suppl 1)**:S175

Background: Agitation is an urgent condition involving motor hyperactivity and a common manifestation of various underlying psychopathological conditions, including schizophrenia and bipolar disorder [1]. The primary purpose of this observational study was to describe the occurrence of EPS and secondary to describe the course of agitation during a 24-hour period, in patients with schizophrenia and bipolar disorder with associated acute agitation treated with IM psychotropic therapies.

Materials and methods: In this multicenter, prospective, observational study were included acutely agitated patients with schizophrenia or bipolar disorder who required treatment with at least one injection of an IM psychotropic drug. Therapies were chosen by the clinician. EPS were recorded as reported episodes of acute dystonia, akathisia and Parkinsonism. The course of agitation symptoms was studied with the use of CGI-S (Clinical Global Impression of Severity), CGI-I (Clinical Global Impression of Improvement) and PANSS-EC (Positive and Negative Syndrome Scale- Excited Component). The present analysis only included patients from the Greek cohort. Patterns of prescription are described.

Results: A total of 1945 patients were included from 12 European countries, the Greek cohort consisted of 300 patients, who completed the 24-hour period. Two post-hoc therapies cohorts were analyzed: olanzapine IM (120 patients) and other IM (180 patients). EPS were described in 11.3% of the patients. 51.7% of the patients received anticholinergic medication in the 24-hour period following IM injection (20.8% for the olanzapine IM and 72.2% for the other IM cohort). Both cohorts showed improvement in agitation symptoms at 1 and 24 hours after baseline injection as shown in the ratings of CGI-S (mean overall CGI-S decrease: 0.9 and 1.6 respectively), CGI-I (mean overall CGI-I: 2.7 and 2.3 respectively) and PANSS-EC (mean overall Total PANSS-EC decrease: 5.8 and 8.8 respectively).

Conclusions: IM psychotropic therapies appeared to be well tolerated for the treatment of acute agitation in patients with schizophrenia and bipolar disorder. Moreover, patients treated with IM psychotropics (olanzapine and other IM) showed improvement in agitation measures, after 1 and 24 hours.

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S176**Use and misuse of emergency medical services by neurological patients presenting to a Greek Tertiary Health Care facility**

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Annals of General Psychiatry 2008, **7(Suppl 1)**:S176

Background: With a population of about 1,000,000 inhabitants, Metropolitan Thessaloniki is the second largest town in Greece and the capital of the region of Macedonia. Among the city's 12 public hospitals, Papageorgiou General Hospital is one of its four tertiary health care facilities. In the metropolitan areas of Athens and Thessaloniki, public hospitals are on-call not on a daily, but on a one-in-four-days rotation basis. This system leads to an immense number of patients that presents every day to the Emergency Outpatient Departments (EOD) of Greek public hospitals, but exact data on the use (and maybe misuse) of public health facilities remain scarce.

Materials and methods: In a prospective observational study, demographic and medical data were collected from all patients presenting for a presumed neurological disorder to the EOD of Papageorgiou General Hospital, with special respect to the use of public emergency transport services (PETS). The study covered the time period from 1.2.2006 to 31.1.2007.

Results: The absolute number of patients examined for a presumed neurological disorder during the study period was 5901. Final diagnosis was stroke (all subtypes) in 36.3%, vertigo in 13.4%, episodic loss of consciousness in 9.6%, psychiatric disorder in 9.4%, epileptic fits in 7.9%, headache in 4.2%, stupor or coma in 4.2% and other diagnosis in 15.0% of the patients. From this total of 5901 patients, 1242 (21.0%) used PETS for their transportation to the EOD. In summer (June to August), PETS were used by 17.9% of the patients, while this percentage rose to 22.8% in winter (November-January). Only 705 (56.8%) of these 1242 patients that used PETS for transportation were eventually admitted to a hospital ward.

Conclusions: The Greek National Health System is hospital-based. The paucity of public primary health care facilities forces patients to present immediately to a secondary or tertiary health care facility. Inevitably, this results in a misuse of PETS that becomes evident from the fact that more than 40% of the patients presenting to the EOD using PETS were not even admitted to hospital. Thus, misuse of PETS increases the financial burden of the Greek National Health System.

S177**Use of Emergency Medical Services by headache patients in a Greek metropolitan population**

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Annals of General Psychiatry 2008, **7(Suppl 1)**:S177

Background: In the absence of effective pre-hospital health care facilities in Greece, patients with acute or chronic pain are

forced to present immediately to the Emergency Outpatient Departments (EOD) of the on-call public hospitals. Thus, the treatment of headache patients may result in a relevant increase in the burden of work of the EOD.

Materials and methods: In an open prospective study design, epidemiological and clinical data were collected from all patients presenting with headache as their main symptom at the Emergency Outpatient Department (EOD) of Papageorgiou Hospital, a tertiary health care facility in metropolitan Thessaloniki, from August 2006 to January 2007.

Results: During the study period, a total of 2813 patients presented at the EOD. 420 (14.9%) of those patients complained about headache as their main symptom. They were 133 (31.6% of headaches) men, 291 (68.4%) women, with a mean age of 36.6 years in male and 39.7 years in female headache patients. A primary headache was diagnosed in 214 (50.9%) patients, secondary headache in 101 (24.0%) patients and 105 (25.1%) patients did not fulfil the diagnostic criteria for a distinct headache. 65 (15.4%) patients were admitted to hospital, about half of them (n = 30, 7.1%) to a one day care unit, and 35 (8.30%) to a ward. 24 (5.7%) patients arrived with public emergency transport services, but only 11 were admitted to hospital.

Conclusions: Subjective and objective severity of headache considerably increase the burden of the local EOD to a degree that turns use of EOD into misuse.

S178**Intravenous thrombolysis for acute ischaemic stroke – results from 25 patients treated in a Greek tertiary care hospital**

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Annals of General Psychiatry 2008, **7(Suppl 1)**:S178

Background: In 2003, the EMEA approved the use of intravenous thrombolysis with rt-PA (Actilyse®) for therapy of acute ischaemic stroke within three hours from system onset, under the condition that these patients are treated according to the SITS-MOST protocol (Safe Implementation of Thrombolysis for Stroke – MOonitoring STudy – <http://www.acutestroke.org>) and referred to the SITS-MOST registry. Since then, thrombolytic treatment is offered to stroke patients in Greece in a limited number of centers.

Materials and methods: After opening a fully equipped Stroke Unit at the Department of Neurology of Papageorgiou General Hospital in Thessaloniki (Greece), 25 patients (15 male, 10 female, median age 58 yrs) were treated with rt-PA for acute ischaemic stroke, according to the SITS-MOST protocol.

Results: Median baseline NIHSS (National Institute of Health Stroke Scale) score was 9. 14 patients had large vessel disease, 3 suffered from cardiogenic embolic stroke, and 8 patients had a lacunar stroke. 18 of the 25 patients experienced quick and lasting amelioration of their deficits, 4 patients remained in unaltered neurological condition, and two patients died from space-occupying extended ischaemic stroke. One patient suffered a symptomatic (fatal) parenchymal haemorrhage.

Three months after the stroke, 19 out of 22 surviving patients were functionally independent, with a score of 0–2 on the modified Rankin Scale.

Conclusions: These results are strikingly similar to those reported from the SITS-MOST study [1]. They document that intravenous thrombolysis for acute ischaemic stroke is feasible also under the conditions of the Greek National Health System. As in most other studies, the prognosis of stroke after thrombolytic treatment depends on stroke severity (and cerebral infarct size) rather than treatment complications.

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S179

Incidence of inherited thrombophilia in Greek patients with cerebral venous thrombosis

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Annals of General Psychiatry 2008, **7(Suppl 1)**:S179

Background: Hereditary thrombophilia has been reported to be present in approximately 30% of all patients with cerebral venous thrombosis (CVT). However, data on the incidence of inherited thrombophilia in Greek CVT patients are scarce.

Materials and methods: We report the results of the diagnostic work-up including a full thrombophilia screening in a consecutive case series of 27 patients (7 males, 20 females, age range 17–59 years) with CVT from a Greek tertiary healthcare facility.

Results: Cephalgia was the leading symptom in 85% of the patients (n = 23), focal neurological signs were present in 48% (n = 13), and epileptic seizures in 22% (n = 6). Multiple thrombosis of cerebral sinus was a common finding in MRI and MRV: Thrombosis of the superior sagittal sinus was found in 78% (n = 21), of the transverse sinus in 41% (n = 11), the sigmoid sinus in 7% (n = 2), of the sinus rectus in 18% (n = 5) and of the cavernous sinus in one patient only. Elevated D-dimers were found in 48% (n = 13), hyperhomocysteinaemia in 30% (n = 8), heterozygous mutation of the MTHFR gene in 44% (n = 12) and homozygous MTHFR mutation in 18% (n = 5). Other hereditary thrombophilias (e.g. FV-Leiden mutation, n = 1, or the prothrombin G20210A mutation, n = 2) were found in single cases only.

Conclusions: In this consecutive open case series of Greek patients with CVT, the incidence of inherited thrombophilia was considerably higher than reported from other comparable study populations.

S180

European mania in bipolar longitudinal evaluation of medication study (EMBLEM): clinical outcomes during the acute phase for the greek population

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Background: Bipolar disorder is a life-long psychiatric illness found in 2–5% of the population [1]. The aim of the present study was to describe the 12-week (acute phase) clinical outcomes of Greek standard practice in the pharmacological treatment of acute mania.

Materials and methods: EMBLEM (European Mania in Bipolar Evaluation of Medication) was a 2-year prospective observational study on the outcomes of pharmacological treatment for acute mania. All treatments were at the discretion of the treating psychiatrist. The clinical status of the Greek patients was studied during the first 12 weeks of treatment in the acute phase of the illness, with the use of CGI-BP, YMRS and HAM-D-5.

Results: A total of 3684 patients were enrolled in 14 European countries, between December 2002 and June 2004. The Greek subpopulation consisted of 645 eligible individuals (18%). Greek patients experienced clinical improvement as shown by the decrease in mean CGI-BP overall and mania subscales, YMRS and 5 item HAM-D over 12 weeks of the acute phase. 72% of the Greek patients had improved (defined as the first decrease of a minimum of 2 points in CGI-BP overall at any time during acute phase) and 31% had recovered (defined as a score of 2 or less on CGI-BP overall in the last visit and the visit prior to last). Compliance also improved as the percentage of patients who almost always complied with medication increased from 44% at baseline to 82% at week 12. The majority of patients received atypical antipsychotics either as monotherapy or as combination therapy for the duration of treatment.

Conclusions: This large observational study showed that most patients experienced clinical improvement after 12 weeks of treatment and that atypical antipsychotics were the most commonly taken as combination therapy for acute mania.

Acknowledgements

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S181**European mania in bipolar longitudinal evaluation of medication study (EMBLEM): functional outcomes during the acute phase for the Greek population**

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Background: Bipolar disorder is a relatively common, long term and disabling psychiatric illness that is associated with high levels of functional impairment, morbidity, mortality and an increased risk of suicide [1]. The aim of the present study was to evaluate the functional status of Greek patients with acute mania in the context of bipolar disorder, after 12 weeks of pharmacological intervention.

Materials and methods: EMBLEM (European Mania in Bipolar Evaluation of Medication) is a 24 month prospective observational study for in- and outpatients with acute mania. The functional status of the Greek population was studied during the acute phase of the illness (first 12 weeks), as reported by changes in their relationship status, work, social activities and life satisfaction. Changes in alcohol, cannabis and other substance use are also reported.

Results: A total of 3684 patients were enrolled in 14 European countries and the Greek population consisted of 645 individuals (18%). At baseline, 18% of the Greek population were inpatients compared to only 4% by week 12. Work impairment was mild or not present for 38% of the Greek population by week 12 compared to 27% at baseline. Satisfaction with life increased from baseline to the 12-week endpoint (52% of the Greek patients were satisfied or very satisfied compared to 32% on baseline). The percentage of alcohol, cannabis and other substance use decreased from baseline to week 12.

Conclusions: In this large naturalistic study, improvement of functional status was observed in the Greek population, especially with respect to the domains of work and life satisfaction.

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S182**High plasma Amyloid β 42 and P-tau in mild cognitive impairment as risk factors of the disease**

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Background: Patients with mild cognitive impairment (MCI) is reported to develop Alzheimer's disease (AD) at the rate of 12% per year, greatly exceeding the 1% to 2% incidence of normal controls. Several studies have shown an increase in plasma A β 42 in MCI compared to normal and AD patients. The efficiency of A β peptides elimination in earlier stages of AD has proven in animal models. We found no study measuring phospho-tau (p-tau) level in plasma.

Materials and methods: We measured the plasma level of A β 42 and p-tau181 in 7 patients with MCI, 29 AD and 16 normal controls who had also underwent brain SPECT imaging.

Results: Plasma levels of A β 42 and p-tau were significantly higher in MCI (57.9 \pm 33.3 pg/ml) (44.5 \pm 91.5 pg/ml) comparing AD (16.3 \pm 15.5 pg/ml) (3.4 \pm 10.7 pg/ml) and normal group (12 \pm 7.7 pg/ml) (00 pg/ml) (p < 0.000) (p < 0.010) respectively. P-tau was not detectable in normal group but p-tau was detectable in (57%) (4/7) of patients with MCI and 4 patients with AD. 3 patients with MCI who had high plasma A β 42 and detectable p-tau too, had shown bilateral.

Posterior temporoparietal hypoperfusion and one showed not-characteristic perfusion defects in SPECT.

Conclusions: Since high plasma A β 42 and p-tau in our patients with MCI were accompanied by perfusion defect characteristic of AD which is said to be a sign of the progression of MCI to AD, we suggest the evaluation of plasma A β 42 and p-tau as the risk factors of the disease in patients with MCI.

S183**The contribution of brain perfusion SPECT and magnetic resonance imaging in early diagnosis of neurodegenerative dementia**

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Background: To compare the diagnostic value of the perfusion pattern of SPECT and atrophy pattern of MRI for

neurodegenerative dementia and its early detection we studied patients with different types of dementia.

Materials and methods: 107 patients underwent MRI and SPECT using HMPAO at the Department of Radiology and Nuclear Medicine of AHEPA University Hospital. Our patients based on clinical diagnosis were categorized into 3 groups: a) Neurodegenerative dementia (ND) consisted of 61 patients (mean age 71 ± 9) with Alzheimer's disease (AD), frontotemporal dementia (FTD), dementia with Lewy bodies (DLB) and mixed dementia, b) Vascular cognitive impairment VCI consisted 27 patients (mean age 70 ± 7), and c) Normal group included 19 persons (mean age 64 ± 7).

MR images and SPECT images were visually evaluated and grouped also into 3 categories: Neurodegenerative (ND) pattern, vascular impairment (VI) pattern and normal pattern.

Results: The sensitivity, specificity, positive and negative predictive value for MR imaging were 72%, 98%, 97% and 77% and for SPECT 98%, 93%, 95% and 97% respectively. The sensitivity and specificity of visually evaluating MR images in the cases with mild stages of the disease was 47% and 95% and for SPECT 93% and 95% respectively. MRI helped us in detecting microangiopathies in our patients by showing white matter hyperintensities which can not be detected by SPECT.

Conclusions: We conclude that visually evaluating of MR images dose not contribute to the early detection of neurodegenerative dementia in contrast to SPECT but rather to distinguish vascular impairments. Hence the physician will need to compound these tools to obtain more accurate diagnosis.

S184

Right inferior parietal region hypoperfusion as a reflection of anosognosia in dementia

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Background: Anosognosia in patients with dementia may make the patients to behave unsafely and can have an impact on treatment compliance. The aim of this study is to evaluate the correlation of anosognosia in patients with dementia and regional cerebral blood flow (rCBF) in different regions of the brain.

Materials and methods: Seventy three patients in mild or moderate stage of dementia of different types are included in the study. After a clinical interview with the patients and their relatives, the patients were divided into two groups: a) anosognosia consisted of 41 patients (mean age 73 ± 11 y) (mean MMSE 17 ± 5), who were not aware of their disease. b) no anosognosia including 32 patients (mean age 71 ± 8 y) (mean MMSE 23 ± 4), who had full awareness of their disorder. The patients underwent HMPAO single photon emission computed tomography (SPECT) and rCBF was measured using region of

interest (ROI) in right and left prefrontal, frontal, superior and inferior parietal, lateral and medial temporal, occipital and Posterior cingulate.

Results: The patients with anosognosia significantly differed from the patients with no anosognosia in rCBF in right ($P < 0.034$) and left ($P < 0.008$) prefrontal, right inferior parietal ($P < 0.002$) and right ($P < 0.001$) and left ($P < 0.002$) medial temporal cortex and also in MMSE ($P < 0.000$). There was a significant correlation between MMSE and rCBF in right and left prefrontal and medial temporal regions but not the right inferior parietal region.

Conclusions: Anosognosia may reflect functional impairment in these regions specially the right inferior parietal region which seems to be independent of MMSE variable.

S185

Plasma homocystein levels in relation to β Amyloid and Tau Protein in cerebrospinal fluid of patients with Mild Cognitive Impairment and Alzheimer's Disease

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Background: Increased plasma homocystein (Hcy) is reported to be an independent risk factor for neurodegenerative diseases [1]. Hcy may be involved in the potentiation of neurotoxic and vasculopathic processes [2, 3], leading to β Amyloid ($A\beta$) and Tau protein accumulation in brains of patients with dementia. A positive association between plasma levels of Hcy and $A\beta$ has been observed [4]. The aim of the present study was to investigate whether plasma Hcy in patients with Mild Cognitive Impairment (MCI) and Alzheimer's disease (AD) correlates with Tau protein and $A\beta$ in cerebrospinal fluid (CSF).

Materials and methods: Plasma Hcy, folate, vitamine B12, creatinine and CSF Tau protein, phosphorylated Tau protein (P-Tau), $A\beta$ 1-42, $A\beta$ 1-40 were assessed in patients with MCI ($n = 32$) and AD ($n = 15$). Differences between the groups with regard to demographic variables, intervals between blood and CSF collection and plasma and CSF parameters were performed using the Mann- Witney- test. Correlations between continuous variables were examined, using unadjusted Pearson correlation coefficients.

Results: The MCI patients were significantly younger and performed significantly better on the MMSE. Tau protein and P-Tau levels were significantly higher in the CSF of AD patients compared to MCI patients. The levels of $A\beta$ 1-42 and $A\beta$ 1-40 were significantly lower in the AD group. Hcy correlated inversely with folate and Vitamine B12, positively with age. Plasma Hcy levels did not correlate with CSF Tau protein, P-Tau, $A\beta$ 1-42 or $A\beta$ 1-40.

Conclusions: Plasma Hcy levels increased with age but did not correlate with CSF parameters in MCI and AD patients.

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S186

Plasma level of Amyloid β 42 Is independent of neuronal function in Alzheimer's Disease

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Background: Amyloid β 42 (A β 42) accumulation is said to be one of the major pathogenic events in Alzheimer's disease (AD). Regional cerebral blood flow (rCBF) studies using SPECT aid the diagnosis of AD. We evaluated any correlation between rCBF in different regions of the brain and plasma A β 1-42 in patients with AD. To date we have found no study in this concern. Any correlation between age and sex of the subjects with plasma A β 42 and rCBF is studied too.

Materials and methods: Forty five subjects are included in the study. 29 patients (mean age 71 \pm 9) with a diagnosis of AD fulfilled NINCDS-ADRDA criteria with a mean MMSE of 15 \pm 9, and 16 normal controls (age 64 \pm 8) underwent SPECT brain imaging with HMPAO. RCBF was measured in different regions of the brain. Plasma samples were collected the same day which the subjects had underwent SPECT.

Results: A significant reduction of rCBF was observed in most regions of the brain of the patients comparing normal controls. Mean Plasma A β 42 didn't differ between two groups (16.3 \pm 15.5 pg/ml in AD, 12 \pm 7.7 pg/ml in controls). There was no correlation between rCBF in any region, and plasma levels of A β 42 in no group and also between sex and age.

Conclusions: Since rCBF is coupled to neuronal function we conclude that plasma A β 1-42 concentration is independent of neuronal function and can not differentiate AD subjects from normal controls while rCBF is significantly reduced in most the brain regions in AD. In AD rCBF and plasma A β 42 measurements are not affected by sex and age.

S187

Intra CA1 insulin microinjection improves memory consolidation

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Background: Although the brain was considered as an insulin-insensitive organ, a recent study has shown that insulin receptors exist in the brain and insulin modulates some of the brain tasks [1]. Insulin and its receptors are found in specific areas of CNS with a variety of region specific functions different from its direct glucose regulation in the periphery. The hippocampus and cerebral cortex distributed insulin/insulin receptor has been shown to be involved in brain cognitive functions [2]. The improving effect of insulin on spatial memory acquisition has been showed [3]. In present study, the effect of insulin microinjection into the CA1 region of rat hippocampus on spatial memory consolidation has been investigated.

Materials and methods: Rats were cannulated in the CA1 region of their hippocampus. One week after surgery, the rats were trained in the Morris water maze. The single training session consisted of eight trials. After training, rats received bilateral injections of vehicle (saline) or insulin (0.5, 6, 12 MU) through the cannulae. 24 hours later probe test was done.

Results: The results showed that post training 12 MU insulin injection significantly increased the time spent in target quadrant ($p < 0.01$), distance traveled in target quadrant ($p < 0.01$) and % entries to target quadrant ($p < 0.01$).

Conclusions: On the basis of present data, it is concluded that 12 MU insulin (but not 0.5 and 6 MU) improved memory consolidation.

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S188

Patological jealousy among alcoholics – a case report

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Background: Pathological jealousy among alcoholics more commonly affected men than women. The jealousy type of delusional disorder is rare. The onset is often sudden. A person with a jealous delusion can inflict significant verbal and physical abuse on the spouse and can even kill her or him. In 1891, Richard Freiherr von Krafft-Ebing emphasized the frequent association between alcoholism and jealous delusion.

Materials and methods: We exposed the 52-male patient who was treated in the Institute of Addictions, Department of Alcoholism, Belgrade in period of May to July 2007, and verification the next diagnosis according the ICD -X: Alcohol Dependency, Delusional Disorders. We used the medical history of illness, data collected by clinical examinations, psychiatry interviews administered both to patient and the spouse and reviewed actual bibliographical and related articles.

Results: The exposed patient was diagnosed by ICD-X like alcohol dependency 10 years ago. He is heavy drinker and alcohol consumption is very frequent. The initial period of alcohol abuse was in early adulthood. After he married there were a lot of couple and family problems, also problems with kids. The symptoms of pathological jealousy began 3 years ago, suddenly and very prompt, with no real evidence.

Conclusions: Alcoholism has a main role to development of pathological jealousy and there are strong associations between this condition and dependence on alcohol.

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S189

Psychological impact of perinatal bereavement in different cultures

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Background: Perinatal death includes stillbirth and neonatal death and comes as a shock for the parents, family and medical staff since it is always an unexpected death.

The aim of this study was to explore the feelings this event creates, the social implications which might arise and the role of the cultural parameters which influence the procedure of mourning.

Materials and methods: Our data comes from the Psychotherapy Unit of the Psychiatric department in the AHEPA University General Hospital (Thessaloniki, Greece) where 28 cases have been seen during 2003–2006, and after an assessment they have been offered psychodynamic psychotherapy (individual, couple or family).

Results: All women presented depression and anxiety disorders. Fathers presented great distress (67%) and sexual dysfunction (58%). Children showed regressive phenomena.

Conclusions: Social factors and cultural parameters involving with the tragic event play a major role in the mourning processes. Religion and personal beliefs influence the bereavement period and have a catalytic impact on the psychological situation of the couple, relatives and the medical environment.

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S190

Association of the GABRB3 microsatellite marker in gamma-aminobutyric acid-A receptor beta 3 subunit gene with autism spectrum disorders in Korean trios

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Background: This study aimed to identify the association between GABA-A receptor subunit β 3 (GABRB3) gene and autism spectrum disorders (ASD) in Korea.

Materials and methods: Fifty-eight Korean children with ASD (47 boys (81.0%), mean age, 5.5 \pm 4.1 years old) were enrolled from the outpatient clinic at a general hospital in Seoul, Korea. In addition, 46 family trios, each consisting of an affected child with ASD and that child's biological parent, were recruited. Eighty-six healthy control subjects (71 males (82.6%), mean age, 33.6 \pm 9.3 years old) were also recruited through advertisements in local newspapers. TDT was applied to analyze the preferential intergenerational transmission of GABRB3 microsatellite in 46 complete trios.

Results: 183 bp long allele in GABRB3 gene were preferentially transmitted in families with ASD ($p = 0.025$). A population-based case-control study, however, showed no association between ASD and GABRB3 microsatellite polymorphism.

Conclusions: Our data provide preliminary evidence that GABRB3 gene is associated with ASD in Korea.

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S191**The Gilliam Autism Rating Scale (GARS - 2), a pilot study for the Greek autistic population**
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Background: The present research project (a pilot study) aims to examine and to validate the Gilliam autism rating scale to the Greek population, and what the standardization probabilities are.**Materials and methods:** In this research took part 30 participants (15 non autistic and 15 autistic subjects), recruited from the Greek health settings, at city of Ioannina Greece. The sample was taken in random order. The questionnaire, which was administrated, was a rating scale that originally created by James Gilliam. GARS-2 is a revised version of the Gilliam Autism Rating Scale (GARS) for identifying and diagnosing autism in individuals ages 3 through 22 years. It contains new normative data. All 42 test items are based on the most current definitions of autism by the Diagnostic and Statistical Manual of Mental Disorders: Fourth Edition-Text Revision (DSM-IV TR) [1] and the Autism Society of America [2]. Test items are divided into three subscales: Stereotyped Behaviors, Communication, and Social Interaction.**Results:** Statistical analysis of the data revealed that the Test items, which are divided into three subscales: Stereotyped Behaviours, Communication, and Social Interaction, did have affection on the autistic quotient for the autistic sample (using a linear model and regression). No affection on the autistic quotient was noticed for the non - autistic sample. Non-statistical significant differences were found in both autistic and non - autistic sample, between the autistic quotient and sex (autistic, $t = 0.24$, $df = 28$, NS), and non - autistic sample ($t = 0.13$, $df = 28$, NS), autistic quotient and age (autistic, $t = -0.11$, $df = 28$, NS) and non - autistic sample ($t = -0.31$, $df = 28$, NS).**Conclusions:** It seems positive that the GARS can go under standardization for the Greek autistic population. From the analysis of the data it is obvious and for both Greek autistic sample that every subscale does not interpret the autistic quotient by itself but the three of them in summary, as it is for the US population. Finally the advantages and the disadvantages of the scale were also discussed.**References**

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S192**Seasonal hospitalization in patients with mood disorder**Athanasios Karkanias¹, Georgios Moussas², Argiro Pachi¹, Kalliopi Vassila-Demi¹, Dionisios Bratis¹ and Athanasios Tselebis¹¹Psychiatric Department, "Sotiria" General Hospital, Athens, Greece²Second Psychiatric Department, "Attikon" General Hospital, University of Athens, Greece

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Background: Several studies have indicated the participant role of the season of the year as a factor of manifestation of mood disorders. Furthermore, although the seasonal pattern of admissions of patients with mood disorders have been extensively studied in international bibliography, just few relative references are present in Greece. The objective of this study is to investigate the seasonal necessity of hospitalization in Greek patients with mood disorders.**Materials and methods:** The demographic characteristics of 448 inpatients diagnosed with mood disorder during a four years' period were reviewed. We specifically recorded sex, age, duration of hospitalization, season of admission and the number of patients hospitalized involuntarily.**Results:** Females were statistically more ($x2 p < 0.05$) than males (60.9% vs 39.1%). Mean age of the sample was 44.7 years (± 13.61) whereas mean duration of hospitalization was 18.85 days (± 16.74). Age and duration of hospitalization doesn't seem to differentiate as to sex (t test $p > 0.05$). The number of involuntarily hospitalized patients doesn't differentiate as to season of admission ($x2 p > 0.05$) however we observed an increase of admissions of voluntarily hospitalized male patients in spring ($x2 p < 0.05$). Finally, the duration of hospitalization is not influenced by season of admission. Also, the age factor is independent to the season of hospitalization (ANOVA $p > 0.05$).**Conclusions:** The results report an increase of necessity of hospitalizations in patients with mood disorders in spring, a finding which is in agreement with relevant international studies. Increased sunlight or environmental temperature may be risk factors. Further studies are required in order to investigate if these findings are related to weather conditions or other risk factors.**References**

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S193**Co morbidity of alcoholism in patients with anxiety and mood disorders**Georgios Moussas¹, Maria Diallina³, Athanasios Tselebis², Kalliopi Vassila-Demi², Dionisios Bratis² and Athanasios Karkanias²¹Second Psychiatric Department, "Attikon" General Hospital, University of Athens, Greece²Psychiatric Department, "Sotiria" General Hospital, Athens, Greece³Psychiatric Department, "G. Gennimatas" General Hospital, Athens, Greece

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Background: According to the World Health Organization (W.H.O), the alcohol dependence - abuse related disorders presents a prevalence of 1 - 5%. Furthermore, it is well known that there is a high co-morbidity between mental disorders and alcoholism.

The goal of this study is to investigate and to make a comparison of alcohol use and abuse in patients with anxiety and mood disorders.

Materials and methods: For a two months period, all the patients examined and diagnosed with anxiety and/or mood disorders (according to D.S.M – IV – TR) in the Emergency Department of two General Hospitals, completed the Cage Test, which traces covered alcoholism problems. The test includes 4 items and is specified to detect alcoholism in the general population and in general hospital patients. Two or more positive answers suggests alcohol dependence – abuse. Residents acquainted with its use gave the test. Finally, we recorded the demographics (sex, age, education and family status) of all examined patients included in the study.

Sample: 130 patients (68 with anxiety disorders and 62 with mood disorders) are included in the study. 49.2% were males and 50.8% were females. The mean age of the sample was 42.58 (\pm 14.63) years and the mean duration of education was 10.98 (\pm 4.18) years. As to family status, 41.5% were married, 39.2% were single and the rest of them were divorced.

Results: The mean score of the sample in the Cage Test was 0.73 (\pm 1.23). The corresponding mean score in patients with anxiety disorders was 0.60 (\pm 1.04) and in patients with mood disorders was 0.87 (\pm 1.41), with no statistical difference between the two scores (t test $p > 0.05$). A percentage of 21.5% of all patients presented positive score in the test (positive answers > 2). Separating the sample as to diagnosis, 19.1% of patients with anxiety disorders and 24.2% of patients with mood disorders presented positive score, with no statistical difference between the two groups (χ^2 $p > 0.05$). Male patients had higher mean score in Cage Test than females (0.95 ± 1.34 vs 0.52 ± 1.08 , t test $p < 0.05$). There was no correlation between Cage test score and age (Pearson correlation $p > 0.05$). As to family status, married patients (mean cage score 0.43 ± 0.84) presented statistically lower scores in comparison with singles (mean cage score 0.84 ± 1.30) and divorced patients (mean cage score 1.26 ± 1.66). We observed negative correlation between the duration of education and cage score in patients with mood disorders (Pearson correlation $p < 0.05$, $r = -0.303$), in contradiction to patients with anxiety disorders who presented positive correlation (Pearson correlation $p < 0.05$, $r = 0.259$). The introduction of age factor doesn't differentiate the correlation above (partial correlation).

Conclusions: Our results confirms an increased alcohol abuse in patients with anxiety and mood disorders in comparison with the general population. These patients, probably, use alcohol in order to self – medicate their symptomatology. Demographic factors, like age or family status have a different impact. Although aging seems to reduce alcohol use in the general population, this is not observed in our patients. In contrast, family status has a significant role in the pattern of alcohol use. Further studies are required in order to investigate the participant role of the duration of education in the alcohol use and abuse in patients with anxiety and mood disorders.

S194

Comparative Laterality in (central) auditory processing disorders and dyslexia

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Background: Laterality may be assessed through dichotic testing and is a measure of hemispheric brain functioning and

specialization. It is generally documented that the left hemisphere is specialized for language and the right for music and speech prosody. Scientific references of dichotic digits are numerous and include a Greek dichotic digits test.

Materials and methods: The Greek dichotic digits test was digitalized with simultaneous removal of noise and optimization of speech quality. The test was then administered at a supra-threshold level through headphones in a group of children diagnosed with (central) auditory processing disorders and/or dyslexia as well as in a control group.

Results: Percentages of correct identification of digits were calculated separately for each ear and the scores were organized and analyzed according to the four subject groups. Group 1: normal children, Group 2: children diagnosed with dyslexia, Group 3: children diagnosed with (C)APD and Group 4: children diagnosed with both dyslexia and (C)APD. Mean scores for the right ear were 90.25, 86.88, 76.50 and 70.83 for groups 1,2,3 and 4 respectively and for the left ear 88, 84.58, 70.83, 70.83.

Conclusions: Children with (Central) Auditory Processing Disorders and children with co-existing dyslexia and (C) APD show greater difficulty in performing the dichotic digits test as opposed to normal children and children with dyslexia. This could aid in more appropriate intervention for dyslexic children.

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S195

Pupils' auditory perception accuracy under different musical and conceptual auditory inputs

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Background: School classrooms are noisy as a consequence of both internal and external noise. Children's auditory processing abilities in noisy situations are not at the level of the adult ones; hence, it may be getting more difficult for pupils to participate by discriminating verbal and/or musical auditory inputs in the classroom.

Materials and methods: Pupils' auditory perception accuracy was examined using two different musical pieces P1 and P2 and children aged 9 and 11 years from Grades C and E, respectively. P1 demonstrated a moderate verbal structure (in terms of meaning and word difficulty) and a moderate musical structure (regarding rhythm and melodic patterns). Additionally, P2 introduced more complex verbal and musical structures. Initially, children listened to the pieces entirely. Next, the pieces were divided into verses and children were asked to report what they listened after each verse; this procedure was repeated

once more. Children's answers were categorized into three different categories, which consisted of high, moderate and low auditory perception. The data were coded and statistically analyzed using MS Excel 2003.

Results: Results from Grade C showed that within a classroom of 9 pupils a higher percentage of accurate answers i.e., ~28%, was indicated compared with classrooms with more pupils. Moreover, results after the second listening showed that the accurate answers were interestingly increased up to ~41%. Furthermore, 28 pupils of Grade E, performed less accurate (~19%) than the ones in classroom with 19 pupils (~68%), indicating inversely analogous to the difficulty level of the auditory and conceptual inputs. Finally, when pupils from different Grades i.e., C and E, listened to the same piece, it was found that children of both Grades presented similar accuracy (17.2%-C, 18.9%-E) at the first listening and yet significantly higher increase at the second listening, of Grade C (48.5%) than Grade E(24.3%).

Conclusions: Young children's auditory perception accuracy was affected by the number of children in the classroom, classroom noise and the repetitive procedure.

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S196

The auditory disturbances of aphasic Greek population (a factor analysis)

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Background: Purpose of the present study was to record the auditory disturbance that occurs in adult's aphasia for the Greek population. This record was made by the use of the Minnesota test for the differential diagnosis of aphasia (M.T.D.D.A) which was originally created by Hildred Schuell in 1946 [1] and was later revised in 1972 by Jenkins, Jimenes-Pabon, Shaw and Sefer [2] and preliminary standardized for the Greek language by Arampatzi and Tafiadis [3].

Materials and methods: The battery is used as diagnostic scale for the differential diagnosis of adult aphasia and measures the language skills in the aphasic population. The first part is specialized to track the auditory disturbances (auditory discrimination, auditory retention spam, and vocabulary comprehension), and was administered to 45 aphasic participants recruited from Greek health settings, aged 37-83 years. All the aphasic subjects had ENT examination normal.

Results: Statistical analysis of the data revealed that the results obtained are generally consistent with the results reported in other countries. No statistically significant differences were found between the results obtained for the Greek population and the results reported in the USA population in all auditory subtests.

Conclusions: The battery appears to be sensitive to adult aphasic symptomatology for the auditory disturbances in the Greek population and presents satisfactory criterion among the types of aphasia, as the aphasic participants assessed demonstrated clear patterns of deficit.

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S197

The visual and reading disturbances of aphasic Greek population (a factor analysis)

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Annals of General Psychiatry 2008, **7(Suppl 1)**:S197

Background: Purpose of the present study was to record the visual and reading disturbance that occurs in adult's aphasia for the Greek population. This record was made by the use of the Minnesota test for the differential diagnosis of aphasia (M.T.D.D.A) which was originally created by Hildred Schuell in 1946 [1] and was later revised in 1972 by Jenkins, Jimenes-Pabon, Shaw and Sefer [2] and preliminary standardized for the Greek language by Arampatzi and Tafiadis (2005) [3].

Materials and methods: The battery is used as diagnostic scale for the differential diagnosis of adult aphasia and measures the language skills in the aphasic population. The second part is specialized to track the visual and reading disturbances (the visual discrimination of patterns, visual comprehension, visual involvement, reduction of reading vocabulary, and verbal retention spam), and was administered to 45 aphasic participants recruited from Greek health settings, aged 37-83 years. All the aphasic subjects had their visual examination normal.

Results: Statistical analysis of the data revealed that the results obtained are generally consistent with the results reported in other countries. No statistically significant differences were found between the results obtained for the Greek population and the results reported in the USA population in all visual subtests.

Conclusions: The battery appears to be sensitive to adult aphasic symptomatology for the visual disturbances in the Greek population and presents satisfactory criterion among the types of aphasia, as the aphasic participants assessed demonstrated clear patterns of deficit.

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S198

The numerical relations and arithmetic disturbances of aphasic Greek population (a factor analysis)

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Annals of General Psychiatry 2008, 7(Suppl 1):S198

Background: Purpose of the present study was to record the numerical relations and arithmetic disturbances that occurs in adult's aphasia for the Greek population. This record was made by the use of the Minnesota test for the differential diagnosis of aphasia (M.T.D.D.A) which was originally created by Hildred Schuell in 1946 [1] and was later revised in 1972 by Jenkins, Jimenes-Pabon, Shaw and Sefer (1975) [2] and preliminary standardized for the Greek language by Arampatzi and Tafiadis (2006) [3].

Materials and methods: The battery is used as diagnostic scale for the differential diagnosis of adult aphasia and measures the language skills in the aphasic population. The fifth part is specialized to track numerical relations and arithmetic disturbances in correlation with education level of the participants, and was administered to 45 aphasic participants recruited from Greek health settings, aged 37–83 years.

Results: Statistical analysis of the data revealed that the results obtained are generally consistent with the results reported in other countries. No statistically significant differences were found between the results obtained for the Greek population and the results reported in the USA population in all visual subtests.

Conclusions: The battery appears to be sensitive to adult aphasic symptomatology for the numerical relations and arithmetic disturbances in the Greek population and presents satisfactory criterion among the types of aphasia, as the aphasic participants assessed demonstrated clear patterns of deficit.

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S199

The creation and pilot validation of the Greek test for auditory discrimination (in minimal pairs) for pre-school children

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Background: The present research was the creation and pilot validation of the T.A.D. (test of auditory discrimination in minimal pairs) for the Greek population. T.A.D. was created to diagnose the ability of auditory discrimination in pre - school children.

Materials and methods: In this research took part 40 participants (20 boys - 20 girls) recruited from the Greek pre - school population at the region of Thessalonica. The sample was taken in random order; it was independent from origin and socio - economic situations, aged from 5years - 0 months till 5 years - 11 months. The test, was administrated to all 40 children, was the T.A.D., which was created from Tafiadis and Chorozopoulou. Also an ENT and a psychological examination were also requested.

Results: Statistical analysis of the data revealed that, some pairs should be changed. The reasons of those changes were due the wrong choice of pictures or due to the wrong choice of the minimal pair. In our effort to compare our sample due to sex, non-statistical significant differences occurred, for the voiced pairs ($t = -0,239$, $df = 19$, $NS - sig.2 - tailed = 0,163$). And also for the voiceless pairs ($t = - 0,223$ $df = 19$, $NS - sig.2 - tailed = 0,223$). The Reliability of the test also was measured, Coefficients Alpha.1672. The results shown that pairs that have to be changed are [(give - drink) (dino - pino)], [(tent - dog) (skini - skili)], and [(three - cold) (tria - kria)].

Conclusions: The creation and validation of a new test for the acoustic discrimination in minimal pairs (T.A.D.) its the first step for the diagnosis of specific learning disabilities or language - speech disorders. Trough the analysis, seemed positive that we managed to see that the majority of the participant had the acoustic discrimination ability. The crushing majority of the participants are able to discriminate sounds (both voiced and voiceless). However, there are not statistically differences in accordance to sex, the age of the children the ENT examination and the psychometric evaluation.

S200**Potential of acetylcholine action in the ventral tegmental area facilitates morphine-state dependent learning**

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Background: It is well known that morphine influence learning and memory processes. The ventral tegmental area (VTA) which has an important role in reward, participates in morphine-induced impairment of memory retention [1]. Considering the cholinergic system is involved in the effects of morphine on memory [2], in the present study, the effects of intra-VTA injections of an anticholinesterase, physostigmine on morphine-state dependent learning has been investigated in rats. **Materials and methods:** A single-trial step-through passive avoidance task was used for the assessment of memory retention in male Wistar rats. Animals were bilaterally cannulated in the ventral tegmental area by stereotaxic instrument, and were allowed to recover 1-week before behavioral testing.

Results: Post-training subcutaneous (s.c.) administration of different doses of morphine dose dependently decreased the learning and induced amnesia. The administration of the same dose of morphine as pre-test treatment induced state-dependent learning. Pre-test intra-VTA injection of physostigmine with an ineffective dose of morphine significantly restored the retrieval and potentiated morphine state-dependent memory. Moreover, Pre-test intra-VTA administration of the physostigmine alone did not affect memory retention.

Conclusions: This findings indicate that the potentiation of cholinergic system in the VTA by physostigmine facilitates morphine state-dependent learning.

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S201**The effect of temperature and rainfall on psychiatric inpatients' admissions**

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Annals of General Psychiatry 2008, 7(Suppl 1):S201

Background: The effect of weather conditions on the need to admit patients in psychiatric wards has been studied; more

particularly this effect has been focused on the influence of exposure to sunlight and ambient temperature. Relative atmospheric humidity and rainfall may influence medical admissions. Thus, the aim of the present study was to assess the effect of ambient temperature and rainfall on Greek inpatients' psychiatric admissions.

Materials and methods: We included all the Greek inpatients' admissions in a general hospital's psychiatric ward over four years. Gender and age for each inpatient, as well as the discharge diagnosis (per DSM – IV – TR) and the admissions' particular conditions (voluntary or involuntary) were noted. Regarding environmental conditions the average peak monthly ambient air temperature and cumulative monthly rainfall in the greater Athens area during the study period (as provided by the Greek Meteorology Authority) were noted. Gender, age, diagnosis and the admission conditions were assessed vis-à-vis environmental conditions with Pearson's correlation.

Results: One thousand three hundred and seventy six inpatients (men 50.5% & women 49.5%) were included in the study. Mean age was 41.6 ± 14.2 years (men 40.4 ± 14.1 & women 42.7 ± 14.3 years). Seventy five percent of admissions (n = 1031) were voluntary and 25% (n = 345) were involuntary.

Temperature was strongly positively correlated with the number of overall psychiatric admissions (r = 0.475, p < 0.01), admissions for schizophrenia and other psychoses (r = 0.360, p < 0.01) and with male gender of admitted psychiatric inpatients (r = 0.416, p < 0.01). A positive correlation was noted between temperature and the number of involuntary admissions (r = 0.302, p < 0.05), whereas the correlation between temperature and the number of inpatients admitted because of mood disorders was of marginal statistical significance (r = 0.260, p = 0.05). Rainfall was negatively correlated with overall psychiatric admissions (r = -0.306, p < 0.05). Further negative correlations of rainfall were also found with the number of patients admitted for organic brain syndrome (r = -0.373, p < 0.01) and involuntary admissions (r = -0.425, p < 0.01).

Conclusions: It appears that temperature may influence the number of psychiatric inpatients' admissions. This may be attributed to the unfounded and no-so-uncommon practice of giving lower drug dosages during periods of high ambient temperature or heat waves (nevertheless this treatment change remains to be substantiated by "hard" clinical evidence). Furthermore, the negative effect of rainfall on psychiatric admissions may be attributed to limited health care accessibility at times of precipitation.

S202**Mental state and criminal behavior**

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Annals of General Psychiatry 2008, 7(Suppl 1):S202

Background: The positive symptoms of psychiatric patients are a common cause of aggressiveness and violent behavior, which some times lead them to commit crimes. So far, there are controversial data concerning the mental state of the patients at the time they commit the crime. However, the majority of the investigators suggest that, especially for the schizophrenic patients, at that time they do manifest active psychotic symptomatology.

Materials and methods: 50 patients, 47 males and 3 females, who have committed crimes, were found irresponsible due to mental illness and are now hospitalized in the Psychiatric Hospital of Thessaloniki, were studied. They were divided in two groups by the existence of delusions or not in their clinical state at the time of the crime.

Results: In the first group of 38 patients who presented with positive symptoms at the time of the perpetration of the crime, 35 suffered from schizophrenia and other psychotic disorders, 1 from depression, 1 from substance related disorders and 1 from mental disorder due to general medical condition. From them 21(55%) committed homicide, 7(18%) attempted homicide, 6(16%) physical assault and 4(11%) arson and damages alter mensens. Between them, 16 patients had also acoustical and/or optical hallucinations: 10 committed homicide, 1 attempted homicide, 3 physical assault and 2 arson and damages alter mensens. In the second group of 12 patients without active symptomatology, 6 suffered from schizophrenia and other psychotic disorders, 3 from substance related disorders and 3 from mental disorder due to general medical condition. From them 7(58%) committed homicide, 2(17%) attempted homicide, and 3(25%) arson and damages alter mensens.

Conclusions: The majority of the patients (76%) had delusions with or without hallucinations, which related to members of their families, mostly mothers and wives. Taking into consideration that most of the times the victims were from their family environment, the violent acts probably depend on the relationships between them.

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S203

Metabolic monitoring of psychiatric patients on second-generation antipsychotics

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Background: The current literature suggests that psychiatric patients have increased mortality and morbidity rates compared with the general population, primarily due to cardiovascular disease. There is increasing evidence that the use of second-generation antipsychotics is associated with an elevated risk in the appearance of metabolic abnormalities, which promote the risk of cardiovascular disease. Abdominal obesity seems to play a contributory role in the conferring risk for hyperglycemia and dyslipidaemia.

Materials and methods: 40 patients, all males, who are now hospitalized in the Psychiatric Hospital of Thessaloniki, were studied. Their mean age is 43 years old (25-78) and they are all on treatment for at least 1 year with second-generation

antipsychotics. 33 are heavy smokers and only one exercise twice a week.

Results: The mean waist circumference is 109.1 cm (ranging from 85 to 131 cm) and for 32 (80%) of them is above 102 cm. The mean BMI is 29.5 and in 36 (90%) cases is above 25 (BMI > 25 = overweight). 6 (15%) of them have high glucose level(> 110mg/dl), 18 (30%) have high total cholesterol (> 200mg/dl) and the mean blood pressure is estimated about 130/85 mmHg. 14 patients have triglycerides above normal (> 150mg/dl) and 8 have low HDL levels (< 40mg/dl). 8 patients need antihypertensive, 4 hypoglycemic and 2 hypolipidemic drugs. In sum, 14 patients (35%) need treatment for the metabolic disturbances, probably caused by the use of the SGAs.

Conclusions: Literature review and evidence from our study show the important role of weight-gain in psychiatric patients, as it is associated with a variety of adverse physiological effects, including changes in plasma glucose and lipid levels. Therefore, ongoing monitoring for patients who are being treated with SGAs and careful selection of treatment in high-risk patients is needed.

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S204

How does the family confront the crime?

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Annals of General Psychiatry 2008, **7(Suppl 1)**:S204

Background: Despite the literature about the Psychiatric Reform in Greece, there are chronic mentally ill patients who are now hospitalized in the Psychiatric hospital of Thessaloniki, often a long distance away from their families. They are patients who have committed crimes and were found irresponsible due to mental illness. From the clinical practice, it has been observed that many of them have no visitors, whereas, some others have regular and often visits. It is also known that some families show great interest in finally taking the patient back home, which is demonstrated by the number of declassification trials they are willing to endure, where they testify in court that they want to take the responsibility of continuing the treatment at home.

Materials and methods: 42 patients, who are now hospitalized in the Psychiatric Hospital of Thessaloniki, were studied. 24 of them are manslaughterers, 8 have attempted to commit homicide, 6 physical assault and 4 arson and damages alter mensens. Their age ranges from 25 to 78 years and the mean time of their hospitalization is 8 years.

Results: We found that 16 of our patients have no visitors at all (38%). As regards to the frequency, 10 patients have regular (at least once a month) and the other 16 have rare visitation (at

least once in six months). When we related the frequency of the visits with the number of the trials in order to return to their families, we found that the trials were 5 times more in the group which had regular visits and 8 times more in the group which had no visits compared with the one with the rare visits. Moreover, when we related the visits with the crime, we found that, as regards for the manslaughter (mostly psychotics), they had visitors at least once a month, despite the fact that in 2/3 of the cases the victim was a member of the family. The ones who have attempted homicide have visitors once in two months and the rest (mostly with substance abuse related diseases) once in six months.

Conclusions: It seems that the frequency of visits does not reflect the interest of the family in taking the patient back home. So, the patients who have no visits are roughly divided in two groups: the ones whose families are far away only as regards to the kilometeric distance, and the ones whose families are absent altogether.

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S205

Effects of microinjections of nicotine into the dorsal hippocampus on morphine- induced amnesia

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Background: It has been shown that the dorsal hippocampus has an important role in the induction of reward-related learning by morphine [1]. Considering the hippocampal cholinergic system is critically involved in memory [2], the aim of this study was to evaluate the effects of bilateral microinjections of nicotine into the dorsal hippocampal CA1 regions on morphine-induced amnesia.

Materials and methods: A single-trial step-through passive avoidance task was used for the assessment of memory retention in male Wistar rats. Animals were bilaterally cannulated in the CA1 regions of the dorsal hippocampi by stereotaxic instrument, and were allowed to recover one week before behavioral testing.

Result: Post-training subcutaneous (s.c.) injection of morphine dose-dependently induced impairment of memory retention, indicating morphine-induced amnesia. Intra-CA1 microinjections of different doses of nicotine, immediately before post-training administration of morphine dose-dependently inhibited morphine-induced amnesia. While, post-training bilateral microinjections of the same doses of nicotine into the CA1 regions alone did not affect memory retention.

Conclusions: The existing evidence supports that morphine dose- and time-dependently impairs retention of memory and thus exerts amnesic effects in the step-through passive

avoidance task. Moreover, the results suggest a possible role for nicotinic receptors of the CA1 region of the dorsal hippocampus in the improving effect of nicotine on the morphine-induced amnesia.

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S206

Post-training nitric oxide synthase inhibition in the CA1 region of rat hippocampus does not impair spatial memory consolidation

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Background: The highest levels of Nitric oxide (NO) throughout the body are found in neurons, where NO functions as a neuromodulator and appears to be involved in a variety of different neuronal functions, including learning and memory [1]. A number of behavioral studies have provided evidence for the involvement of NO in the early stages of memory processing [2, 3]. Considering the critical role of the hippocampus in the processing of spatial information [4], the present study was designed to determine if post-training NO synthase inhibition in the CA1 region of rat hippocampus could affect spatial memory consolidation.

Materials and methods: Adult male rats were implanted with bilateral intra CA1 guide cannulae and were trained in the standard hidden platform version of the Morris water maze and given immediate post-training infusions of vehicle (saline) or N-omega-nitro L-arginine methyl ester (L-NAME), an NO synthase inhibitor (50,100 and 200 microgram / 0.5 micro liter) through the cannulae. A probe trial was done 24 hours later to test memory for the platform location.

Results: All rats learned to find the platform on Day 1. But, there was no significant difference in spent time and traveled distance near the trained platform location and quadrant entries during the probe trial among the groups.

Conclusions: This work demonstrates that local NO synthase inhibition failed to affect performance in the rats that had previously acquired the task. Therefore it seems that NO synthesis in the CA1 hippocampal region is not crucial in consolidation of spatial memory in the Morris water maze learning task.

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S207

Involvement of GABA-B receptors of the dorsal hippocampus in the inhibition of morphine-induced amnesia by morphine sensitization

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Background: Our previous studies show that pre-training administration of morphine induces amnesia [1] and this effect was significantly reduced in morphine-sensitized mice [2]. In the present study the role of GABA-B receptors of the dorsal hippocampus in the inhibition of morphine-induced amnesia by morphine sensitization were investigated in mice.

Materials and methods: A single-trial step-down passive avoidance task was used for the assessment of memory retention in adult male NMRI mice. Animals were bilaterally cannulated in the CA1 regions by stereotaxic instrument, and were allowed to recover 1-week before behavioral testing.

Results: Morphine-induced amnesia was reversed in morphine-sensitized mice which had previously received once daily injections of morphine for 3 days. The inhibition of morphine-induced amnesia in animals that had previously received the 3-days morphine treatment was significantly decreased by once daily injections of the different doses of GABA-B receptor agonist, baclofen prior to s.c. injections of morphine. Amnesia induced by pre-training morphine had no significant change in mice which had previously received once daily injections of CGP35348 plus an ineffective dose of morphine for 3 days.

Conclusions: The present results indicate that GABA-B receptors of the dorsal hippocampus may play an important role in the inhibition of morphine-induced amnesia by morphine sensitization.

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S208

Treatment of depersonalization disorder with fluoxetine: a case report

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Background: One small prospective series and two single case reports had described successful treatment of primary

depersonalization disorder in a number of patients treated with fluoxetine [1, 2, 3]. But then, one recent randomized, double masked, placebo-controlled trial failed to show efficacy [4]. We present the case of depersonalization disorder that responded favorably to fluoxetine treatment.

Materials and methods: A 23-year old single man had a 1-year history of primary depersonalization disorder. He described feeling “detached from my body, as if I was observing myself from the outside, cut off from emotions and feelings, feeling as if I had completely lost my self and feeling like I was in a dream”. He felt far removed from everything. The patient was treated with fluoxetine 10 mg/day, which was slowly raised to 40 mg/day.

Results: Eight weeks after beginning fluoxetine, the patient had a remarkable improvement. Following complete resolution of the depersonalization symptoms, the patient began to socialize, entertain and work. This is continued for 12 months of follow up.

Conclusions: Fluoxetine may be a promising pharmacological treatment for primary depersonalization disorder.

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S209

Depression and anxiety among nursing students in Greece

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Background: The aim of this study was to determine the prevalence of depression and anxiety and the association between depression, anxiety and psychiatric symptoms among nursing students in Greece.

Materials and methods: A total of 170 students (first year 48, second 45, third 38 and fourth 39) agreed to participate in the study. Students completed the Greek versions of three instruments: the General Health Questionnaire (GHQ-30), Beck Depression Inventory (BDI-II) and the State-Trait Anxiety Inventory (STAI).

Results: Majority of the students (71.8%) perceived stress, most of them in mild levels (31.8%). About 12.4% reported very high levels of stress. The mean scores of state anxiety were 41, 45, 37.5 and 41, of trait anxiety 40.5, 41, 44, 42 and of depression 12, 13, 13, 9 for the four years respectively. Depressive symptoms were reported by 52.4% of the sample and high depressive symptoms by 4.7%. The average GHQ score was 5, 6, 5 and 4. The factor analysis of GHQ showed that "severe depression" and "somatic symptoms" were the primary and secondary factor causing stress. A positive relationship between anxiety, depression and mental stress was found.

Conclusions: It is usually observed that students undergo tremendous stress during various stages of their course. In our sample, year 2 and 3 nursing students indicated experiencing the highest degree of pressure from studies but the levels of anxiety and depression were not significantly different among the four years. Additional studies are needed to improve our understanding of the causes and consequences of nursing student stress.

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S210

The impact of hypothyroidism on neurocognitive functioning: A model of neuroplasticity in the mature adult human brain

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Annals of General Psychiatry 2008, **7(Suppl 1)**:S210

Background: Hypothyroidism (HYPO) has been shown to interfere with cognitive function; the extent of this dysfunction, particularly mild hypothyroidism (SCH), varies considerably. It is hypothesised that specific memory deficits associated with hypothyroidism will be resolved following treatment with L-thyroxine.

Materials and methods: To address these questions we performed a battery of neuropsychological tests to investigate differences of HYPO and SCH patients, and compare this to age-matched controls at baseline and 3 months. The tasks specifically examine learning and memory, attention and general intelligence: focusing particularly on the assessment of executive functions (primarily PFC-mediated) and memory function (primarily HF-mediated).

Results: Verbal memory deficits are evident between the groups on the CVLT at baseline where both SCH and HYPO participants are significantly different from the controls.

Significant differences are also seen in associative memory using the Face-Name task. In addition spatial memory deficits were evident in the Rey Figure ($p < 0.05$). However in the working memory tasks, there were no differences found using the Stroop task and the N-Back task. Depression scores were also significantly different between the groups using the BDI ($p < 0.05$). For the HYPO, many of these tests do not return to within the normal range by the 3 month follow-up, although the SCH seem to normalize by 3 months.

Conclusions: The results would suggest that deficits seen at baseline in hypothyroidism are not problems with working memory. They suggest that there is a more specific deficit associated with this disease.

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S211

Rate and risk factors of hypomania in recurrent and resistant depression

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Background: Recognition of Bipolar Spectrum at an academic, clinical, and national level has increased in recent times. Therefore there is a tremendous need for adequate and new research in the clinical and epidemiological domains. Some of these clinical works have been established through international collaborative work with European centers (Zurich, Paris, Pisa) and UCSD (San Diego). The Poster presents the most recent data on the development of the Hypomania Scale (HCL-20), which have been initiated in France (Epidep study).

Materials and methods: Bipolact studies were implemented in the end of 2005 in order to explore the rate of hypomania in resistant and recurrent depressions, at a national larger scale (523 doctors and 2332 patients with major depression). Hypomania is defined by a score of 10 or more on the HCL-20. Multiple logistic regression analyses were conducted on all demographic and clinical factors obtained.

Results: Hypomania rate was 62.4% and 62.5% in recurrent depression (respectively in primary care and out-patient psychiatry; $N = 1702$) and 55.4% in resistant depression (psychiatry setting; $N = 630$). Moreover, "Ups and Downs" (cyclothymic traits) appeared as the most robust factor linked to hypomania occurrence and independent from another major risk factor "family history of bipolarity" which seemed to be significantly linked to recurrence of depression more than to hypomania. Others significant factors are: early age of depression onset and substance abuse.

Conclusions: The data obtained in "real world" medical practice within a large sample showed the high rate of hypomania in major depression when recurrent or resistant, and when seeing in psychiatric or primary care settings. This means that clinicians need to be familiarized with the soft bipolar spectrum and the systematic use of self-rating of hypomania.

Acknowledgements

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S212**Randomized control trials testing the efficacy of psychotherapy in individuals at Ultra High Risk for developing psychosis: a review**

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Background: In the past ten years an effort has been made to establish clinical criteria, in order to predict which individuals are at ultra high risk (UHR) of developing psychosis. Various preventive and therapeutic methods have been used at people with incipient risk of developing psychosis, psychotherapeutic as well as psychopharmacological. The psychotherapeutic techniques are certainly more appropriate to use in such populations for safety reasons. The goal of our presentation is to find out if there has been sufficient indication of the efficacy of such psychotherapeutic techniques through randomized control trials.

Materials and methods: We conducted a systematic literature search through the web, for the years 1980–2007, combining key words of “prevention”, “ultra high risk”, “prodrome”, “psychosis”, “psychotherapy” and then limited our results to “randomised control trials”. We also searched for major meta-analyses and reviews of prevention studies for psychosis.

Results: Only two randomised control studies were found to be conducted in such populations, searching for the efficacy of cognitive therapy and needs-based supportive psychotherapy.

Conclusions: Both of them demonstrated that psychotherapy is useful in such groups, since it reduces the likelihood of making progression to psychosis, the need for prescription of antipsychotic medication and has enduring benefits over the long term.

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S213**The clinical presentation of ADHD in adults with Learning Disability: experience from a National Specialist Adult ADHD clinic**

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Background: There is growing evidence that ADHD is more common in children and adults with Learning Disabilities (LD)

and that it can be successfully treated even if diagnosis can be difficult because of ‘diagnostic overshadowing’. This study provides empirical data about the ADHD symptoms in LD and non-LD populations.

Materials and methods: The sample consisted of 48 LD-ADHD (IQ < 80) adults compared to 221 ADHD non-LD (IQ ≥ 80) adults. Symptoms were evaluated using the informant-rated Barkley scale for childhood and adulthood behaviour. T-tests, paired samples t-tests and principal component analysis were conducted to investigate the pattern of symptoms for each group.

Results: The LD group differed significantly from the non LD group for a number of the current inattentive symptoms’ ratings and presented also higher scores for all items during childhood, indicating greater severity of symptoms. For the non-LD group, most symptoms improved from childhood to adulthood. However, for the LD group, there was overall improvement as indicated by the total score, but no items showed significant change from childhood to adulthood.

Principal component analysis for current symptoms in the LD revealed scattered loading of different items into five components to account for 73.98% of the variance for informants’ ratings. These components were not consistent with the classic cluster of inattentive, hyperactive and impulsive symptoms as was the case for the non-LD group.

Conclusions: ADHD symptoms can be identified successfully in LD patients, however clinicians should be aware that the pattern of the clinical presentation can be different for this clinical population.

Acknowledgements

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S214**Theory of Mind (ToM) and Depression – an explorative study including Narrative ToM-Performances**

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Background: “Theory of Mind” contains seeing oneself and others in terms of mental states. Deficits of ToM-ability were found in patients with mood disorders, but have not yet been adequately explored. We assessed particularly ToM-ability in

patients with chronic depression compared to a healthy control group. Using our new instrument "WE.EL", which comprehends highly emotional and dynamic social interaction sequences in form of cartoon picture stories, we measured not only cognitive but also innovatively narrative ToM-abilities in order to 1) explore the ToM-expressions-structure, 2) analyse the kind of differences between groups and 3) characterise ToM-deficits more exactly.

Materials and methods: In 30 patients and 30 healthy controls ToM was assessed using Bróne's inventory for cognitive ToM-attainments (2003) and "WE.EL", in which narrative ToM-performances were considered the better the more the stimulative nature of the sequence was captured.

Results: Patients were significantly impaired in all ToM-tasks. Compared to healthy controls patients' narratives indicated a lack of mentalising affective states, emotions, intentions and reasons for actions and thoughts.

Conclusions: Patients with chronic depression seem to be severely afflicted in "reading" social interactions, clearly demonstrated by the deficient narrative ToM-attainments in WE.EL. A more appropriate method for assessing basic mentalising categories should be considered to understand depression more adequately and enhance psychotherapeutic treatment.

Acknowledgements

Considerable correlations to neuropsychologic variables were not found.

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S215

Assessment of cognitive function with MMSE in chronic schizophrenic inpatients

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Background: In the frame of psychiatric reform, the private sector has developed and adapted in the direction of new data of benefits of psychiatric care. The interaction of the chronicity of the disease with prolonged of the hospitalization has damaged effects on cognitive function.

Materials and methods: Cognitive function was assessed with MMSE. A protocol registered clinicodemographic characteristics and other relevant patient data. (average time from first appearance of schizophrenia, marital status, duration of

hospitalization, educational level, support from familiar environment, average duration of schizophrenic disorder).

Results: Men: MMSE score ranged from 17 to 28 (mean 24,2 little above the 24 that is considered cut off point for this test. Women: MMSE score ranged from 19 to 30 (mean 22,93 under the cut off point).

Conclusions: For the patients included in the study, the exterior stimuli are minimal, their daily activities are limited and their interactions and capacity for communication and expressing feeling are practically null. An important problem is the legal capacity of patients. We believe that is necessary to create new scales to estimate the ability of having lawful acts and not consider these patients incompetents just because they did not achieve the expected results in only one test, as the widespread MMSE.

S216

Factors associated with diagnostic uncertainty in an acute psychiatric department

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Background: Despite the implementation of various classification systems in psychiatric disorders, there is still a diagnostic uncertainty.

Materials and methods: We investigated the possible factors mediating this phenomenon in 141 patients consecutively hospitalized in an acute psychiatric ward of the Psychiatric Hospital of Attica. 141 patients (89 males and 52 females) with a mean age 43 years (range:19-75) were recruited. A questionnaire was completed for each patient, in which psychiatrists rated the degree of certainty associated with the diagnosis.

Results: Diagnosis with a high degree of certainty was possible for 97 patients (68.8%). Certainty in diagnosis increased when the informants were the patient's parents and either lived or had regular contact with the patient. There was a difficulty in diagnostic classification for 44 patients (31.2%). In most of these cases (40 patients, 90.9%) the uncertainty referred to DSM-IV axon I diagnoses. In 31 cases (70.5%) this was due to the difficulty in applying the diagnostic criteria for the present episode, while for 34 patients (77.3%) the reason was the inability to evaluate criteria relating to the disease history and course. Lack of information given by the patient, accounted for the diagnostic uncertainty in 36 patients (81.8%), while in 27 patients (61.4%) the relatives could not provide trustworthy information.

Conclusions: For one third of this sample of acute psychiatric inpatients, there was a difficulty in ascribing a diagnosis with a high degree of certainty. This difficulty mainly involved DSM-IV axon I diagnoses and was associated with a lack of necessary information regarding the current episode and disease course, given by both patients themselves and their relatives.

S217**Cytokine gene polymorphism in multiple sclerosis in a hellenic population**

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Background: Multiple sclerosis (MS) is a chronic, complex, autoimmune, demyelinating disease that affects the Central Nervous System. Cytokine gene polymorphism according to the latest studies, may be considered as an important prognostic indicator in a vast number of autoimmune diseases.

Materials and methods: We investigated 13 cytokine gene polymorphisms in 40 MS patients and 104 healthy control group. From those 40 patients, 20 (group I) were presented with relapsing-remitting type of the disease and the other 20 (group II) with secondary progressive type. Cytokine gene polymorphism was determined by using the PCR-SSP method (Invitrogen, Dyna, Wisconsin, USA).

Results: IL1a -889C/T genotype was more frequent in group I patients in comparison to group II (80% vs 40%, $p < 0,001$). IL-2-330/+166 TG/TT and TNFa -308/-238 GG/AG genotypes were also statistically more frequent in group I than in group II (40% vs 10%, $p < 0,0001$ and 50% vs 20%, $p < 0,001$). IL1a -889 C/C genotype and IL4Ra +1902 A/A genotype were found more frequently in group II than in group I patients (60% vs 20%, $p < 0,001$ and 80% vs 50%, $p < 0,0001$).

Conclusions: These preliminary results of the present study suggest that gene polymorphism of the above cytokine may play a significant role in MS patients evaluation and prognosis.

S218**Psychotropic drug utilization and functioning in a boarding house in Greece**

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Background: A rehabilitation program in the boarding house "Galini A" resulted in a significant decrease in the number of psychotropic medications and a parallel increase in the functioning of patients, during the first 18 months of their

arrival at the unit. The aim of this study is to define whether these achievements were maintained.

Materials and methods: All 15 residents of the unit (mean age 52.27 years, range 37–75, suffering from psychotic disorder and/or mental retardation) were recruited in the study. Functioning was assessed with the Global Assessment of Functioning (GAF) scale and data regarding the drug treatment of each patient was collected. The assessments were made at their arrival at the unit, 18 and 32 months later.

Results: The number of the psychotropic drugs administered at the first day, 18 and 36 months later were: antipsychotics: 27-22-21, classical antipsychotics: 21-10-10, atypical antipsychotics: 6-12-11, benzodiazepines 16-3-2, mood stabilizers: 8-6-6, anticholinergics: 8-2-2, antidepressants: 2-0-0, total : 61-33-31. The mean GAF score was 36,9 - 46,6 - 47,8 respectively.

Conclusions: The decrease in the number of psychotropic drugs was associated with an increase in the residents' global functioning. Both findings were observed 18 months since their arrival at the unit and maintained after 36 months.

S219**Anticonvulsive effects of rutin in a rat model of absence seizure: a novel compound to treat seizure**

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Background: Rutin is a flavonoid of the flavonol type, is found in many typical nutrimental plants and is an important dietary constituent of food and plant-based beverages. It has biological and pharmacological activities, rutin exhibits antioxidant, anti-inflammatory, anti-carcinogenic, antithrombic, cytoprotective and vasoprotective activities [1, 2, 3, 4].

Materials and methods: Adult male rats were cannulated into intracerebroventricular (i.c.v). The anticonvulsant effects of rutin were investigated using the pentylenetetrazole (PTZ)-induced seizure model. The animals were placed individually in plastic boxes and observed immediately after PTZ injection for a period of 30 min. Rutin, diazepam and normal saline were injected i.c.v. at the doses (25-150 nmol), (10 ml/kg) and (5mg/kg) respectively 30 minutes before PTZ (90 mg/kg, i.p). The latency to minimal clonic seizure (MCS), generalized tonic-clonic seizure (GTCS) and percent of mortality protection were recorded, as well as the percentages of protection against the mortality.

Also, for investigating the mechanism of rutin, flumazenil (5 mg/kg) and naloxone (10 mg/kg) were also injected 5 minutes before rutin.

Results: In this study In PTZ-induced epileptic seizures, the i.c.v. injection of rutin at doses of 150 mg/kg prolonged the time MCS and reduced the GTCS latency. The protective effect of rutin against lethality was 20%. In this study, flumazenil (5 mg/kg, i.c.v.) reversed the anticonvulsant activity of rutin. Also, pretreatment with naloxone (10 mg/kg, i.c.v.) antagonized the prolongation of tonic-clonic seizure latency as well as the reduction in seizure duration induced by rutin (200 mg/kg, i.c.v.).

Conclusions: As the results it seems that rutin as a flavonoid, could inhibit PTZ-induced epileptic seizures and may have anticonvulsant activity.

Acknowledgements

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S220

DHEAS and cortisol correlate with Hypothalamic Serotonin-1A Receptors

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Background: Serotonin modulates the activity of the hypothalamic-pituitary-adrenal (HPA) axis, to a big part through the serotonin-1A receptor (5-HT1A) [1]. In return, hormones of the HPA axis, namely dehydroepiandrosterone sulfate (DHEAS) [2] and cortisol have regulatory effects on the serotonergic neurotransmission.

Materials and methods: Eighteen healthy female subjects participated in this PET study. The selective 5-HT1A receptor antagonist [carbonyl-11C]WAY-100635 was used as radioligand. The hypothalamus as an essential part of the HPA axis and eight control regions of interest and the cerebellum as reference region were defined a priori and delineated on co-registered MR images. DHEAS and cortisol plasma levels were ascertained by morning blood collections on the PET day. The 5-HT1A receptor binding potentials of the target brain regions were correlated with DHEAS, cortisol plasma levels and the ratio of DHEAS / cortisol.

Results: We found highly significant correlations between the hypothalamic 5-HT1A receptor binding and DHEAS ($p = .003$)

and the ratio of DHEAS / cortisol ($p < .0001$), but not with cortisol and not in other brain regions.

Conclusions: The 5-HT1A receptor may influence the DHEAS plasma level by modulating CRH and ACTH release as reported for cortisol before [1]. Vice versa, the interaction of cortisol and DHEAS may exert a regulatory effect on the 5-HT1A receptor distribution in the hypothalamus as a feedback loop. As disturbances of the HPA axis [3] as well as changes of the 5-HT1A receptor distribution [4] have been reported frequently in affective disorders, future studies should aim their focus on these interactions.

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S221

Pediatric temporal lobe epilepsy versus frontal lobe epilepsy: how does cognitive performance differ?

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Background: Examinations of cognitive impairments associated with partial epilepsy have focused primarily on temporal lobe epilepsy (TLE), with results indicating both general and specific cognitive impairments, including verbal memory and language impairments in both adults and children [1, 2, 3]. Little is known about frontal lobe epilepsy (FLE). The few existing investigations of pediatric FLE suggest visuospatial difficulties [4].

Materials and methods: The current study investigated differences in general intellectual ability, verbal and nonverbal

ability and memory between children with TLE and FLE. Participants (TLE n = 15, FLE n = 15, ages 7 to 17, mean age 11.5 years, 50% male) were patients from a pediatric neuropsychology clinic. Diagnoses were confirmed by EEGs, clinical report, and physical examination. The Wechsler Abbreviated Scale of Intelligence (WASI), verbal and nonverbal memory tasks were administered.

Results: T-tests revealed that WASI FSIQ was higher in TLE than FLE, $t = 2.08$, $p = .047$. The WASI subtest of Block Design was also higher in TLE, with $t = 2.37$, $p = .025$. No significant differences between TLE and FLE were detected on memory performance. While not all were significantly different, mean scores of children with FLE were lower than those of children with TLE on all indices.

Conclusions: Children with FLE scored lower on a visuospatial task, indicating a specific weakness and also on FSIQ, indicating broader cognitive impairment in FLE than TLE. Expected memory impairments were not confirmed in either TLE or FLE. It is important to characterize pediatric FLE further in order to optimize treatment and rehabilitation.

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S222

Intracerebroventricular administration of Pasipay, the hydroalcoholic extract of *Passiflora incarnata*, suppresses epileptic seizures in rats

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Background: Passion flower (*Passiflora incarnata*) is used in traditional medicine of Europe and South America to treat anxiety, insomnia and seizure; its hydroalcoholic extract, Pasipay has been established in treating the physical symptoms of opioid withdrawal in human, anxiety disorders and ADHD [1, 2, 3]. Recently, it has shown anticonvulsant effects in mice [4].

Materials and methods: Adult male rats were cannulated into intracerebroventricular (i.c.v.). The anticonvulsant effects of rutin were investigated using the pentylenetetrazole (PTZ)-induced seizure model. The animals were placed individually in plastic boxes and observed immediately after PTZ injection for a period of 30 min. Pasipay, diazepam and normal saline were

injected i.c.v. at the doses (0.125, 0.25, 0.55, 1.1 mg/kg), (10 ml/kg) and (5 mg/kg) respectively 30 minutes before PTZ (90 mg/kg, i.p.). The latency to minimal clonic seizure (MCS), generalized tonic-clonic seizure (GTCS) and percent of mortality protection were recorded, as well as the percentages of protection against the mortality.

Also, for investigating the mechanism of Pasipay, flumazenil (5 mg/kg) and naloxone (10 mg/kg) were also injected 5 minutes before rutin.

Results: In this study, in PTZ-induced epileptic seizures, the i.c.v. injection of Pasipay at doses of 1.1 mg/kg prolonged the time MCS and reduced the GTCS latency. The protective effect of rutin against lethality was 30%. In this study, flumazenil (5 mg/kg, i.c.v.) reversed the anticonvulsant activity of rutin. Also, pretreatment with naloxone (10 mg/kg, i.c.v.) antagonized the prolongation of tonic-clonic seizure latency as well as the reduction in seizure duration induced by Pasipay (200 mg/kg, i.c.v.).

Conclusions: These results indicate that Pasipay could be useful for treatment absence seizure and these effects may be related to effect of it on GABAergic and opioid systems. More studies are needed in order to investigate its exact mechanism.

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S223

Bulgarian version of TEMPS-A

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Background: Temperament and character are definitions that describe human individuality. Interactions between temperament and character are sophisticated and they mould personality – phenomenon, which is unique for human beings. Temperament is the "virtual" structure that defines dynamics

and speed of psychic processes: The temperament regulates what is announced and the character – what is the meaning. The meaning of life events and knowledge of life are modified by both.

Actuality of modern groupings into temperamental traits is legalized by conception of H. Akiskal that linked temperamental structure and affective disorders.

Materials and methods:

Aim: Approbation of Bulgarian version of TEMPS-A (Temperament Evaluation of the Memphis, Pisa, Paris, and San Diego Autoquestionnaire).

Tasks: To investigate healthy population between 17 and 45 years.

To identify specific biological predispositions which are predictors of personality and behavioral deviations.

To identify dynamics of personality and temperamental structure during ontogenesis.

Exclusion criteria: 1. Clinical evidence of organic or toxic etiology of brain injury.

2. Mental retardation – mild and severe.

3. Linguistic or some other difficulties in communication that might interfere with adequate clinical assessment.

4. Substance dependence (alcohol and/or other substances) and substance related personal change that can disturb the homogeneity (?) of the group.

5. Delusional disorders, acute or other psychotic disorders.

6. Evidence of individual dysfunction caused by psychiatric disorder, for example psychosis

Instruments: • TEMPS-A – Temperament Evaluation of the Memphis, Pisa, Paris, and San Diego Autoquestionnaire.

• EPQ – Eysenck Personality Questionnaire.

• Screening IPDE (IPDE-s) – International Personality Disorder Examination – screening Autoquestionnaire.

• MPDO – diagnostic psychological inventory for personality features – A. E. Lichko modification personality diagnostic questionnaire.

Results: One of investigators translated original test and a professional translator who has never seen original text, made back-translation. We received full approval by the author.

523 healthy volunteers between 18-45 years old, take part in the study.

Regarding test-retest (temporal) reliability - test was done again 45 days after first one. Our results demonstrate excellent correlations by test at all and by five dimensions separately.

Analysis of the principal components with a Varimax rotation confirm that from the 110 Bulgarian items of the TEMPS-A we brought out five factors that were interpreted as representing the cyclothymic, depressive, irritable, hyperthymic, and anxious factors.

Conclusions: TEMPS-A showed a good reliability and validity (internal consistency) in a Bulgarian non-clinical population. It gives us a new challenge to understand affective disorders nature and opportunities to measure it.

Such research is in progress.

Limitations: The study sample was relatively small.

This is a preliminary report from an ongoing study.

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S224**Depiction of schizophrenia treatment and use of healthcare resources in Greece**

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Background: Detailed data concerning the distribution of patients with schizophrenia across healthcare settings, their corresponding use of healthcare resources and medication received is limited. In this study, we aim to explore psychiatrists' perceptions of clinical practice across healthcare settings in a sample of Greek psychiatric services.

Materials and methods: 63 Psychiatrists (59 Private Practice, 4 University Hospitals) completed structured anonymous questionnaires between October - December 2006. Outcome measures included disease burden, prescription and treatment patterns for the management of schizophrenia.

Results: The distribution of patients treated in private practice versus hospital setting differs significantly across the three phases of schizophrenia; acute (12% vs 5,3%), maintenance (68,6% vs 60,42%) and relapse (19% vs 34,24%) phase respectively ($p < 0.001$), with hospitals demonstrating higher case severity ratings and inpatient average length of stay of 52 days for first episode and 30 days for management of relapse. Office-based psychiatrists present a lower rate (17,8%) of dropouts, defined as patients institutionalized / hospitalized within the past year, as opposed to clinic-based psychiatrists (31,2%), independently of case severity and visit frequency. Stable phase patients on maintenance therapy are monitored more closely in private than hospital practice (32 vs 49 days, respectively). Psychiatrists perceived that conventional and atypical antipsychotics are equally used as first-line choice for acute cases, with a high rate of concomitant antidepressants.

Conclusions: The distribution of patients and the prescription and treatment patterns seem to be different across various healthcare settings, with prevailing of the private setting in the management of acute phase and patient control, and the hospitals in relapses.

S225**The effects of histaminergic system in nucleus accumbens of rats in the plus-maze test of anxiety-like behaviours**

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Background: There are several studies indicating that histamine may elicit modulatory influence on anxiety-related behaviours both

in animals and humans [1, 2, 3, 4]. The activity of histaminergic pathways subserving corticolimbic structures is enhanced in response to fear-evoking and other stressful stimuli. The nucleus accumbens (NAc) belongs to the mesolimbic system and is a major component of the ventral striatum of rat. The elevated plus maze (EPM) was used to assess anxiolytic behaviour.

Materials and methods: In the present study, the anxiolytic effect of bilateral injections of the histamine into the NAc was examined in the EPM. histamin (0.01, 0.1, 1 microgram/rat), pyrilamine and ranitidine (0.001, 0.01, 0.1, 1 microgram/rat) were injected i.c.v. at the doses. Animals used in these experiments were male Wistar rats weighing 220-280 g at the time of surgery. Eight animals were used in each experiment. Animals were bilaterally cannulated in the NAc by stereotaxic instrument and were allowed to recover 1-week before behavioral testing.

Results: Bilateral intra-NAc injections of the different doses of histamine, pyrilamine and ranitidine increased the percentage of open arm time (%OAT) and open arm entries (%OAE). The data may indicate that histamine produced a significant anxiolytic effect without the significant changes in the locomotor activity.

Conclusions: In conclusion, the NAc may be involved in histamine, pyrilamine and ranitidine-induced anxiolytic behavior. Generally we can conclude that effects of histaminergic system of NAc anxiolytic is like behavior of neuromodulatory and via the effect on other neurotransmitters releasing.

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S226**Axis I-Axis II comorbidity of borderline personality disorder: gender-related differences**

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Background: Borderline patients often present for evaluation or treatment with one or more comorbid Axis I and/or Axis II

disorders. These symptom disorders may mask the underlying borderline psychopathology, impeding accurate diagnosis and making treatment planning difficult. The presence of a certain co-occurring conditions impedes the symptomatic recovery of patients with Borderline Personality Disorder and has important treatment implications.

Materials and methods: A clinical sample of 109 patients, 84 females and 25 males, who, according to DSM-IV-TR, suffered from Borderline Personality Disorder and have been treated at the Community Mental Health Center between 2005 and 2006, were examined. Also gender, age, education and family condition were studied.

Results: The proportion between men and women was almost 1:3. Most of the patients have multiple diagnoses. 19(76%) males and 72 (85.7%) females comorbid one or more Axis I disorders and 10 (40%) males and 51 (60.7%) females comorbid one or more Axis II disorders. In particular 10 (40%) males and 56 (66.7%) females had mood disorders, with tendency for depression mostly for females (52.4 vs 36%). Also 3 (12%) males and 15 (17.9%) females, have been reported for anxiety disorders, with tendency for panic disorder with or without agoraphobia and obsessive-compulsive disorder mostly for males (12 vs 10.7% and 8 vs 7.1%). Substance use and somatoform disorders frequently detected in males, in reverse eating disorders frequently detected in females. 6 (24%) males and 42 (50%) females had Cluster B and 10 (40%) males and 38 (45.2%) females had Cluster C personality disorders comorbidity. Histrionic, narcissistic, dependent, and obsessive-compulsive were mostly prevalent in females and avoidant respectively in males. In addition, Cluster A personality disorders rarely co-occurred in both gender.

Conclusions: The results from this study, suggest that the prevalence of DSM-IV-TR Axis I and Axis II disorders in our sample of BPD patients and their gender-related differences, represent the Greek population who seek psychiatric support at the Community Mental Health Centre. Future efforts to explore the link between BPD and Axis I-Axis II comorbidity may be further enriched the significant involvement of gender.

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S227

Axis I-Axis II comorbidity of Obsessive Compulsive Personality Disorder: gender-related differences

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Background: Various studies validate that Obsessive Compulsive Personality Disorder is more common in men than in women. Most research concerning relations between criteria-defined OCPD and other disorders present significant comorbidity among them; with often important diagnostic and treatment implications.

Materials and methods: 82 patients, 22 males and 60 females, who suffered from OCPD and have been treated at the Community Mental Health Centre within the past three years, were investigated. According to DSM-IV-TR criteria, patterns of Axis I and Axis II psychopathology were examined. Gender, age, education and family condition were also studied.

Results: The proportion between men and women was almost 1:3. It is not surprising that patients were likely to have multiple diagnoses, 19 (86.4%) males and all females comorbid one or more Axis I disorders, also 13 (59.1%) males and 42 (70%) females comorbid one or more Axis II disorders. In particular 9 (40.9%) males and 35(58.3%) females had mood disorders, with tendency for depression mostly for females (48.3 vs 27.3%) and tendency for dysthymic disorder mostly for males (13,6 vs 8.3%). High rates of comorbidity, 10 (45.5%) males and 32 (53.3%) females, have been also reported for anxiety disorders, with tendency for panic disorder with or without agoraphobia mostly for females (35 vs 22.7%) and tendency for generalized anxiety disorder mostly for males (13,6 vs 6,7%). Somatoform and eating disorders frequently detected in females, in reverse impulse control disorders frequently detected in males. The findings support significant Cluster C, 10 (45.5%) males and 41 (68.3%) females, and Cluster B, 8 (36.4%) males and 25 (41.7%) females, personality disorders comorbidity. Dependent, histrionic, avoidant and borderline were mostly prevalent in females and respectively narcissistic in males. In addition, Cluster A personality disorders rarely co-occurred in both gender.

Conclusions: The results from this study, suggest that the prevalence of DSM-IV-TR Axis I and Axis II disorders in our sample of OCPD patients and their gender-related differences, represent the Greek population who seek psychiatric support at the Community Mental Health Centre.

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S228

The role of the serotonin transporter in the background of traits associated with Neuroticism: the association of affective temperaments, anxiety and depression in a psychiatrically healthy population

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Background: Results from contemporary research suggest that the serotonin transporter gene plays a role in the background of several mental disorders related to the Neuroticism trait, which has also been associated with this gene. However, the Neuroticism trait and psychiatric disorders are very complex both in their manifestation and in their neurobiological background, with several, mutually interrelated genetic, neurochemical, psychological and social factors playing a role. Therefore in order to have a better understanding of what role 5HTTLPR plays in the background of affective and anxiety disorders on one hand, and in the background of the Neuroticism trait on the other, it seems more reasonable to find better described, more distinct and atomic entities composing these phenomena and investigate their association with the polymorphism in question. The aim of our research was to investigate the association of Neuroticism-related characteristics, such as depression, anxiety and affective temperaments with the 5HTTLPR polymorphism of the serotonin transporter gene in a psychiatrically healthy population.

Materials and methods: 138 psychiatrically healthy women participated in our study. All completed the Zung Self-Rating Depression Scale (ZSDS), the Spielberger State-Trait Anxiety Inventory (STAI), and the Temperament Evaluation of Memphis, Pisa, Paris and San Diego questionnaire (TEMPS-A). 5HTTLPR genotype was determined by PCR and amplification products were resolved on an 8% non-denaturing polyacrylamide gel by electrophoresis and visualized by silver staining. Psychometric scores of subjects carrying and not carrying the s allele (dominant model) were compared by using ANOVA.

Results: Subjects carrying the s allele scored significantly higher on the ZSD, on both STAI subscales and on those affective temperament subscales which by definition carry a depressive component (depressive, cyclothymic, irritable, anxious).

Conclusions: Our results support that the s allele is associated with affective lability, depression proneness and increased anxiety even in a psychiatrically healthy population. The fact that all the above phenomena are associated with the s allele supports the unity of the Neuroticism trait from a genetic point of view. Research on the genetic associations of personality dimensions leads the way to identifying endophenotypes, such clearly defined and often biochemically quantifiable characteristics which would help in deciphering the genetic background of psychiatric disorders.

Acknowledgements

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S229

Neonatal hippocampal damage in rats and risk of schizophrenia

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Background: While the literature on schizophrenia is well developed, there is epidemiological evidence that obstetric complications, such as perinatal asphyxia, are significantly increased in schizophrenic patients compared to controls. Recent findings suggest an increased risk of developing social withdrawal, neophobia and behavioral stereotypies as a consequence of neonatal asphyxia in rats and various functional and structural changes in the hippocampus have been consistently implicated in human schizophrenia.

Materials and methods: PubMed and ISI Web of Science were searched to identify peer-reviewed studies published between 1987 and 2007 focusing on neonatal damage of the rat hippocampus as a potential model of schizophrenia.

Results: Neonatal insult of the hippocampus may disrupt development of the widespread cortical and subcortical circuitry in which the hippocampus participates. The lesions were intended to involve regions of the hippocampus that directly project to the prefrontal cortex, namely, the ventral hippocampus and ventral subiculum. Morphologic changes often assessed in animal models and deemed similar to pathological changes in human schizophrenic brain include ventricular enlargement and a variety of hippocampal and/or cerebral cortical alterations including reduced volume, neuronal atrophy and altered neurogenesis and neuronal migration.

Conclusions: Neonatal damage of the rat hippocampus appears to reproduce a broad spectrum of schizophrenia-related

phenomena and establishes the neurobiologic plausibility of early damage having a delayed impact on neural functions implicated in schizophrenia. As such, long-term effects of perinatal asphyxia on brain development and the potential psychiatric complications have become an area of increasing research interest.

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S230

Posttraumatic stress response symptoms and quality of life in breast cancer patients after mastectomy and stress reduction program

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Background: Posttraumatic stress is one of many psychological effects in breast cancer patients after mastectomy. Women fear mastectomy more than any surgery as believe, that after mastectomy they are expected with social problems (infringement of relations with the husband, loss of female appeal). Emotional problems are common after mastectomy, but patients differ in their vulnerability. Breast cancer patients experience enormous psychological stress after mastectomy, however, it is often unrecognized and untreated.

Materials and methods: The purpose of this study was to examine posttraumatic stress response symptoms and quality of life in breast cancer patients after mastectomy and stress reduction program. Women with recently diagnosed breast cancer (n = 180) three days after surgery (mastectomy) completed the hospital anxiety and depression scale (HADS), quality of life scale and questionnaires that measured posttraumatic stress. The patients' of the clinical group participated in a 4-week stress reduction program that combines supportive psychotherapy, patient and family education and alfa-massage.

Results: The results of this study indicated that high posttraumatic stress index was significantly associated with the caregiver's burden, the patient's young age, the patient's symptoms and poor perception of her health. This study has demonstrated that 4-week stress reduction program was effective in decreasing symptoms of stress and improving overall quality of life in breast cancer patients after mastectomy.

Conclusions: Stress reduction program is a clinically useful adjunct to offer in breast cancer patients after mastectomy.

S231

Duloxetine-induced hypomania: case report and brief review of the literature on serotonin-noradrenaline reuptake inhibitors (SNRIs)-induced mood switching

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Background: Manic switching during antidepressant treatment has been reported with every class of antidepressant drugs. SNRIs, namely venlafaxine, milnacipran and duloxetine have been increasingly used for the treatment of unipolar and bipolar depression and are well tolerated and sufficiently effective due to their dual mechanism of action.

Materials and methods: A case of duloxetine-induced hypomania in a non-bipolar patient is presented, and a brief review of all the cases of SNRIs' induced mania and hypomania has been carried out.

Results: A 61-year old female patient was examined as an outpatient, presented with a depressive episode which appeared during the previous month, despite continuous, prophylactic treatment with sertraline 200 mg/day. According to her medical records, the patient had a 23-year history of recurrent depression with severe episodes (ICD-10:F33). She also had a hyperthymic/cyclothymic temperament and she occasionally presented with mild paranoid symptoms, unrelated to the episodes of depression. Her family history revealed that two patient's sisters had been institutionalized for unknown severe mental illnesses. Sertraline was tapered and the patient was switched to duloxetine at 60 mg/day. Three days after initiation of duloxetine, the patient became irritable, hypertalkative and aggressive towards her husband. Duloxetine was immediately discontinued and the symptoms started to resolve, but remitted completely only after the introduction of quetiapine. A review of the literature revealed only two reports of duloxetine-induced mania and a total of 13 reports of SNRIs-induced mania/hypomania.

Conclusions: The available data suggest that SNRIs, especially venlafaxine, can induce mood switching in patients with bipolar depression and in certain patients with unipolar depression, but the potential of duloxetine and milnacipran to induce manic/hypomanic symptoms can not be disregarded. Switching appears to be dose-related and treatment initiation with lower doses and upward titration when needed may be preferable in selected cases and may help minimizing the risk of mood switching.

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S232**The dopaminergic system of ventral hippocampus is involved in the anxiety related behavior**

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Background: In the previous studies, it has been shown that dopaminergic mechanisms are related to the production and elaboration of acute and chronic stress. The ventral hippocampus is one of the important brain sites involved in modulation of fear and anxiety.

Materials and methods: To test the effects of dopaminergic system in the ventral hippocampus (VH), we investigated the effect of apomorphine, sulpiride (D2 receptor antagonist) and SCH 23390 (D1 receptor antagonist) microinjections into the VH on the behaviors displayed by male Wistar rats in the elevated plus-maze. In these experiments, animals weighting 220-280 g at the time of surgery were used. Eight animals were used in each group of experiments. After bilaterally cannulating of the animals in the VH by stereotaxic instrument, they were allowed to recover 1-week before behavioral testing. All procedures were carried out in accordance with institutional guidelines for animal care and use. Test videotapes were scored for conventional indices of anxiety (percent open arm entries / time) and locomotor activity (closed arm entries).

Results: Bilateral intra-VH injections of the different doses of apomorphine (0.1, 0.5, 1 microgram per rat) increased the percentage of open arm time (%OAT) and open arm entries (%OAE). The results suggest that apomorphine produces a significant anxiolytic effect without any changes in the locomotor activity. Similarly, intra-VH microinjections of sulpiride (0.2, 1, 5 micrograms per rat), but not SCH 23390 (0.01, 0.1, 1 microgram per rat), has increased (%OAE) indicating an anxiolytic action. The observed effect of sulpiride may be mediated through dopamine release from the dopaminergic terminals in the VH.

Conclusions: In conclusion, dopaminergic system of the VH can elicit anxiolytic behavior.

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S233**Signal processing of the galvanic skin response to quantitatively assess aspects of the educational process**

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Background: Galvanic skin response has a long history and is regularly employed to objectively assess along with other psycho-physiological responses the state of arousal, emotions and as well as cognitive activity [1]. It is a relatively simple and not invasive method and can be applied with little disturbance to subjects. With the advent of electronics it is possible to continuously measure the galvanic skin response, store it in a computer and apply signal processing to extract valuable information [2],[3]. At the same time the computer can be utilized to deliver the stimuli to the subjects thus allowing flexibility, uniformity, a variety of stimuli and combinations of them. In education most of the research is done using subjective tools and many times not concurrently, to assess the various pertinent aspects, like interest, attention, etc. The aim of the present work is to utilize the galvanic skin response of students both at high school and at the university using various stimuli related to the education processes, do signal processing to the resulted time series and device indicators that will describe the objective response of the students.

Materials and methods: To achieve this we have setup a series of stimuli, optical, auditorial and combinations related to situations in the classroom, recorded the response from a number of students by delivering the stimuli through a computer, and processed the signal. From the processing the characteristics of the signal have been isolated and a set of indicators to quantify them has been introduced [4].

Results: This research project will conclude in two steps. Here we present results from the first step which comprise of the experimentation on a small number of subjects to determine a set of stimuli appropriate for the educational case, the study of the time series and the device of quantitative indicators. We find that it is possible to find a suitable set of stimuli to access the educational process. The time series in general comprises of pink noise and the response to the delivered stimuli, thus one can perform a deconvolution to obtain the response. We have tried various quantitative measures of the response and found an indicator which describes a major part of the response. According to this indicator all subjects of this phase showed a clear tendency to habituation.

Conclusions: Our results suggest that there is great potential for using physiological metrics to model emotional experience and cognitive activity, specifically to access the educational process. Experimenting on a small number of subjects we have produced a package of stimuli, signal processing method to isolate the response to stimuli and an appropriate quantitative indicator. The next step is to apply the method to the actual training of pre-service physics teachers.

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S234

Hyperphagia in BDI-II: Clinical and demographic features

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Background: Beck's Depression Inventory, 2nd edition (BDI-II) was developed for the assessment of symptoms corresponding to the criteria of depressive disorders according to DSM IV. Hyperphagia is one of the diagnostic features of atypical depression. The current study was conducted to increase the understanding of hyperphagia concerning its demographic and clinical characteristics, especially in relation to atypical depression.

Materials and methods: 113 patients, who visited the CMHC of N/W district of the Psychiatric Hospital of Thessaloniki, were examined and diagnosed according to DSM IV. All patients completed BDI-II and Spielberger's State-Trait Anxiety Inventory (STAI-Gr). The patients were divided concerning their response to item 18 - hyperphagia (0 - 3) of BDI-II. The two groups (A: no hyperphagia vs. B: hyperphagia = 1 -3)) were examined concerning their demographic and clinical features.

Results: Group A did not differ significantly from group B in terms of age, sex, education and family status. The two groups also did not differ significantly in terms of their diagnoses on Axis I and Axis II of DSM IV. However, there was no case of atypical depression found in group A. Group B scored significantly higher at BDI-II (U = 970.000, p > 0,05).

Conclusions: The item of hyperphagia is strongly correlated with high scores at BDI-II. It seems that hyperphagia is a qualitative indication of atypical depression. It also seems that the BDI-II is a precise diagnostic tool for depressive disorders in addition to DSM IV.

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S235

Hypersomnia in BDI-II: clinical and demographic features

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Background: Hypersomnia is considered to be a diagnostic feature of atypical depression. Beck's Depression Inventory, 2nd edition (BDI-II) was developed for the assessment of symptoms corresponding to the criteria of depressive disorders according to DSM IV. The current study was conducted to increase the understanding of hypersomnia concerning its demographic and clinical characteristics, especially in relation to atypical depression.

Materials and methods: 113 patients, who visited the CMHC of N/W district of the Psychiatric Hospital of Thessaloniki, were examined and diagnosed according to DSM IV. All patients completed BDI-II and Spielberger's State-Trait Anxiety Inventory (STAI-Gr). The patients were divided concerning their response to item 16 (0 - 3) of BDI-II. The two groups (A: no hypersomnia vs. B: hypersomnia = 1 -3)) were examined concerning their demographic and clinical features.

Results: Group A did not differ significantly from group B in terms of age, sex, education and family status. The two groups also did not show significant difference in terms of their diagnoses on Axis I and Axis II of DSM IV. There was no case of atypical depression found in B. However Group B scored significantly higher at BDI-II (U = 660.000, p > 0,01).

Conclusions: The item of hypersomnia is strongly correlated with high scores at BDI-II. It seems that BDI-II is a precise diagnostic instrument for depressive disorders in addition to DSM IV.

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S236**Maternal separation alters the open field behavior of diazepam-treated rats**Noppamars Wongwitdecha¹, Nattaporn Yoopan² and Somruethai Srisomboonlert²¹School of Medicine, Walailak University, Nakhon Si Thammarat, Thailand²Department of Pharmacology, Faculty of Science, Mahidol University, Thailand

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Background: There is evidence that maternal separation of neonatal rats may influence the adult rat behaviors and the responsibility to psychotropic drugs [1, 2, 3, 4]. The purpose of this study was to investigate the effect of maternal separation on the open field behavior of diazepam-treated rats.

Materials and methods: Male Wistar rat pups were reared under 2 conditions: 1) 360 min daily maternal separation (MS) or 2) left undisturbed with their mothers (non maternal separation (NMS)). At 21 days of age, these rats were housed in each group for four weeks. Subsequently, they were tested individually for their sensitivity to diazepam for 5 min in a circular open field arena.

Results: Drug free MS rats, significantly showed hyperlocomotion (increased total zone transition) and more exploration activity (increased number of rears) when compared with the NMS rats ($P < 0.05$). Pretreatment with diazepam (1 and 2 mg/kg, i.p.) 30 min before a 5 min open field test produced a dose related decrease locomotion and exploration activity in the MS rats compared with the saline treated MS rats, but these effects of diazepam were not observed in the NMS rats. Moreover, diazepam (2 mg/kg, i.p.) caused the anxiolytic effect (decreased the inner zone entries) only in the MS rats.

Conclusions: These results suggested that maternal separation of neonatal rats increased locomotion and exploration behaviors of male adult rats, and enhances the anxiolytic effect of diazepam.

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S237**Neurosurgery and quality of life in elderly people**Syrmos Nikolaos^{1,2}, Grigoriou Konstantinos¹, Valadakis Vasilios¹, Charzinasiou Evangelia², Arvanitakis Dimitrios¹ and Syrmos Christos²¹Neurosurgical Department, Venizeleion General Hospital, Heraklion, Greece²1st Neurosurgical Department, Faculty of Medicine, Aristotle's University of Thessaloniki, A.H.E.P.A. University General Hospital, Thessaloniki, Greece

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Background: Elderly are fixed arbitrarily which are over the 65th year of age, without correlation between chronological and biological age.

Elderly represent in the last years the largest part of population in modern society.

In the EU 20% of population are more than 65 years old, with the same percentage in U.S.A.

The number of elderly is increased dramatically because the children that were birth after the 2nd World War, a season that is characterized as "a season of explosion of births" now is approached the 65th year of age. There is increase of average of life at the same time. Also the number of elderly who needs surgical interventions in the last years has been increased too. Approximately half number of them will need surgical intervention.

Age does not constitute contraindication of surgical intervention, when there are guarantees of sufficient care before intervention with safe anaesthesia and knowledge of the anatomic changes in the elder persons with better results.

Materials and methods: The aim of our study is to emphasize the particularities as well as the problems that are presented in third age people when they are nursing in neurosurgical department. In our department at last ten-year period (1997 - 2007) in total of 4500 entrances, 3104 (68,98 %), they concerned on patients of third age, 1374 women (44,27 %) and 1730 men (55,73 %).

Results: The average of age was 74,3 (with breadth 65–105 years old). The 96,5% had: diabetes, hyphenation, atherosclerosis, lipedemia, circulatory - respiratory problems, thyroids, brain tumors, hydrocephalus, cerebrovascular diseases, craniocerebral injuries etc. In our presentation analyzed: the individual diseases that led people to neurosurgical department, the permanence in that and the final result.

Conclusions: 1. There is an increase number of neurosurgical interventions in the elderly.

2. Neurosurgical interventions are more common in men.

3. Individual diseases in elderly are a common situation when they need neurosurgical intervention.

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S238**Neurophysiological investigations in Trigeminal Neuralgia**

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Background: Trigeminal Neuralgia (TN) is a chronic neurological condition which is characterised by severe episodic facial pain. There are two main presentations of TN, the classical and the atypical. The classical TN is characterised by short periods of stabbing pain which are associated with a small trigger zone and remits for varying periods. The atypical presentation has prolonged periods of burning pain, with a constant discomfort between attacks and a sensory impairment.

Materials and methods: The main aim was to show if there are quantifiable differences between classical and atypical TN. A systematic literature review was conducted, using relevant key words across major medical databases. All selected articles were scrutinized independently by the authors, in order to decide on each study's scientific merit, rigor of method and results.

Results: Twenty three 23 studies were identified, eighteen of which were included for analysis. These eighteen studies included clear observational and measurement descriptions of any activities recorded i.e. morphology, frequency, amplitude and peak latencies. Most studies used non-parametric tests like the Mann-Whitney test to determine whether there is any significant difference between symptomatic and quiescent states in each presentation group, and ANOVA to investigate whether there was any significance differences between each presentation in each state.

Conclusions: With regards to patients with the classical TN, spontaneous action potentials are seen from recordings in the trigeminal ganglion and "irritable" activity from the direct nerve recordings from the root entry zone. In patients with atypical TN, there does not exist a typical finding from each recording performed, while spontaneous activity is seen from the ganglion in both symptomatic and quiescent.

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S239**Psychiatric hospitalization following crime conviction**

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Background: The hospitalization of psychiatric patients after a crime conviction represents a special and important part of the responsibilities undertaken by the public psychiatric hospitals in Greece. However, the extent of this phenomenon and its implications for the function of these hospitals has not been properly investigated yet.

Materials and methods: Data concerning the period from 10-12-1957 until 31-7-2007 was collected from the archives of the Psychiatric Hospital of Attica - Dafni. The descriptive method was used.

Results: During this period : a) 122 patients (117 males and 5 females) were admitted b) 72 (68 males and 4 females) patients are currently being hospitalized c) for 30 patients (29 males, 1 female) the commitment was withdrawn, d) 4 male patients escaped from the hospital e) 4 male patients were transferred to other psychiatric hospitals f) 12 patients diseased g) the mean duration of the patients' hospitalization up to now is estimated to be 9.8 years g) the shorter hospitalization had a duration of 3 months and 6 days h) the longer hospitalization has a duration of 49 years, 7 months and 21 days and has not yet been terminated i) most of these patients are hospitalized in acute psychiatric wards, due to the absence of specialized departments.

Conclusions: The hospitalization of patients with a psychiatric diagnosis following a crime conviction in the Psychiatric Hospital of Attica exerts a huge influence upon its function. There is a need for specialized forensic departments in the context of this hospital.

S240**Inadvertent hospitalization in a private mental hospital during period 2000–2006**

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Background: The aim of this project was to study the expansion of the proportion of inadvertent and voluntary hospitalization after the effect of L. 2071/92. The patients can be admitted in a private mental hospital only by a District Attorney's order, and only to the absence of a public psychiatric institution in the area.

Materials and methods: We took record of the number of admittances (inadvertent and voluntary), in a private psychiatric clinic during the period of 2000–2006. We categorized the patients into three categories. The first category was consistent

by inadvertent admitted patients, after being diagnosed of schizophrenic disorder or psychosis, the second category was consistent by patients admitted after being diagnosed of bipolar disorder or schizoaffective disorder and the third category was consistent by patients diagnosed of organic-psychotic syndrome. **Results:** During 2000–2006 there were a total of 1408 admittances in the clinic, 431 of which were inadvertent (percentage 30,61%). Men: 343 (79,58%) Women 88 (20,42%). In the year 2000 the inadvertent admittances were 42 out of 170 (24,70%), in 2001, 50 out of 195 (25,64%), in 2002, 50 out of 190 (26,31%), in 2003, 70 out of 250 (28,00%), in 2004, 69 out of 214 (32,24%), in 2005, 74 out of 217 (34,10%) and in 2006, 76 out of 172 (44,18%).

Conclusions: In the past there was no specific legal frame specifically describing the way of admittance of psychiatric patients, when they do not consent themselves. Usually their family drove the patients by force to the clinic. This study shows that L.2071/92 is applied in Greece proved by the rising percentage of the inadvertent admittances compared to the percentage of the willing admittances. During the seven year period of this study there was recorded a rising of the inadvertent admittances by 178,86%. In addition the patients' rights and dignity are protected this way.

S241

Limbic encephalitis associated with potassium channel antibodies: demonstration of clinical and paraclinical responses to immunotherapy
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Background: Limbic encephalitis (LE) is an inflammatory disorder of the central nervous system (CNS) that can be of paraneoplastic or primary autoimmune origin. The disorder is characterized by personality changes, emotional disturbances, mental status changes, behavior abnormalities, confusion, memory deficits and seizures.

Materials and methods: We describe the case of a 79-year old patient with symptoms of LE who presented with high fever, affective changes in personality, auditory hallucinations, memory loss, irrelevant talking and confusion. The brain MRI at admission showed a left hippocampal T2-weighted lesion with meningeal gadolinium-enhancement and the EEG showed periodic lateralized epileptiform discharges (PLEDS) on the left temporal area. Routine blood tests were normal. CSF examination at admission revealed 50 cells/mm³, predominantly polynuclear (87%) and 0.74 g/l proteins. Polymerase chain reaction for herpes virus 1 to 3, 6 and enterovirus were negative. The patient was treated with acyclovir but three weeks later he developed myoclonia with secondary generalized epileptic seizures. The serum was negative for paraneoplastic antibodies including Hu, Yo, Ri, CV2/CRMP5, Amphiphysin, Ma2/Ta.

Results: Despite the anti-epileptic treatment, the patient's symptoms deteriorated. MRI showed new lesions. The EEG showed a new focus of right parietal PLEDS. Serum voltage-gated potassium channel antibodies (VGKC-Ab) were detected at high levels (3.495 pM). Steroids and plasma exchange were initiated with marked and sustained improvement of neuropsychological function.

This clinical improvement correlated with both EEG and radiological amelioration.

Conclusions: Limbic encephalitis associated with positive VGKC-Ab is a rare condition usually of non-paraneoplastic autoimmune origin. Patients presenting with symptoms mimicking viral or paraneoplastic limbic encephalitis, should be promptly investigated for VGKC-associated encephalopathy. A marked clinical and paraclinical improvement, such as observed with this patient, is usually seen when immunosuppressive therapy is rapidly initiated.

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S242

The hypothalamic-pituitary-adrenal (HPA) system function in patients with Alzheimer's disease and the therapeutic implications

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Background: The role of hypothalamic-pituitary-adrenal (HPA) axis have been the subject of substantial studies in conditions such as major depression, posttraumatic stress disorder, and Cushing's syndrome. HPA disturbances have been associated with memory impairments and hypercortisolemia with atrophy of hippocampus, a limbic structure strong associated with memory and which function is pivotal for the regulation of the HPA system. The neuropathologic hallmarks of Alzheimer disease are very prominent in the hippocampus. Recent discoveries support the existence of a more complicated relationship between stimulation of brain glucocorticoid receptors and memory performance.

Materials and methods: A meta-analysis was conducted out of the 25 studies identified for this study's needs. The oldest was a study by Raskind et al (1982) and the newest a study by Csernansky et al (2006).

Results: A number of valid tests (DST, CSF cortisol levels, UFC levels and Basal Cortisol Levels) have demonstrated an increased HPA activity in AD patients. Hippocampal atrophy was found to be closely associated with increased HPA activity. Hypercortisolemia, in the elderly have shown substantial memory deficits interconnected to a pattern of increasing cortisol levels.

Conclusions: Hyperactivity of the HPA axis in AD leads to memory deficits. More studies of HPA function in normal aging persons, those with mild cognitive impairment and patients with Alzheimer disease, examining pertinent variables such as APOE e4 status, are needed to clarify these new findings. The antiglycorticoid agents seem to be a promising and effective tool in the treatment of particular conditions such as Alzheimer disease and Mild Cognitive Impairment.

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S243

Association between TNF- α secretion levels in major depressive disorder and symptoms' severity, before and after mitogen stimulation

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Background: It is well established that cytokines signal the brain and serve as mediators between immune and nerve cells. Recent research findings have led to speculation that the neuroimmunologic consequences of cytokine levels might be involved in the pathogenesis of depression. Although TNF- α is required for normal immune responses, its overexpression has severe pathological consequences. The present study was undertaken to determine whether TNF- α secretion levels before and after mitogenic stimulation differ between depressed patients and matched healthy controls during clinical improvement.

Materials and methods: Nineteen subjects (8 males, 11 females, mean age 63.2 years, range 48-71), inpatients and outpatients of the Department of Psychiatry who met DSM-IV criteria for a principal diagnosis of Major Depressive Disorder (MDD) were enrolled. The control group consisted of twenty, age- and sex-matched healthy blood donors (mean age 59.12 years, S.D, +/-21). The severity of depressive symptoms was rated using the Hamilton Depression Scale (HAM-D, 17 Item Score). Peripheral Blood Mononuclear cells were isolated and cultured at a concentration of 10⁶ cells/ml for 72 hours in plain culture medium (RPMI containing 10% Fetal Calf Serum and 1% Penicillin/Streptomycin) and in the presence of PMA and Ionomycin. Cytokine concentrations were determined in the supernatants by enzyme-linked immunosorbent assay (ELISA). Strict exclusion criteria concerning factors that might have

influenced immune function and cytokine secretion levels were applied.

Results: TNF- α secretion levels were significantly higher in patients suffering from Major Depressive Disorder compared to healthy controls. Higher HAM-D Score was often combined with increased production of the cytokine but not always in a linear way. Mitogen stimulated TNF- α secretion also seems to be affected by symptoms severity and recovery.

Conclusions: Our data indicate a significant positive association between Depression and increased TNF- α secretion levels. However we failed to demonstrate a linear association between symptoms severity and TNF- α secretion. Altogether these data suggest an immune system activation in patients with MDD, although the relationship of these immune anomalies to the pathophysiology of MDD still remains far from clear. However, should this hypothesis be confirmed, the implications are far-reaching and include new ways of both treating and preventing major depression.

S244

Ethical aspect of psychiatric research: patient's capacity to provide informed consent

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Background: The past few decades have been marked by an ever-increasing awareness of bioethical issues among the scientific community and general public. Informed consent is a question of central importance in contemporary medical ethics, and clinical practice is inconceivable without considering the issues it raises. The determination of psychiatric patient's capacity to understand the risks and benefits of participation in clinical research trials remains an important and controversial issue among psychiatric research community. The purpose of this study is to summarize and critically present the challenges and moral parameters arising from the assessments of the ability of individuals with impaired cognitive function to give informed consent for clinical research enrollment.

Materials and methods: A literature search from 1991 to 2007 was carried out using the ScienceDirect, and Medline electronic databases. The identified research studies were further examined and synthesized.

Results: Recent research indicates that although certain psychiatric disorders might place patients at increased risk of being unable to provide informed consent, psychiatric diagnosis alone does not adversely affect the capacity to consent to research. Decision-making capacity for research is not general but should be viewed as situation specific. Many studies argue that there should be a clear distinction between severity of cognitive deficits and severity of disorder's symptoms. A number of factors such as cultural and religious values, external pressures and developmental factors often escape attention of the researchers, and have not yet formed a systematic element of research interest. Intervention (e.g. presentation method, educational procedures etc) seem to improve understanding and decision-making ability. The currently

used scales providing help in assessing competence in clinical practice and their evaluation are also discussed in our study.

Conclusions: The issue of informed consent has been the object of discussion and disagreement from many perspectives, which are not limited only to the field of medicine. Investigators with mental impaired participants have a greater responsibility for building appropriate safeguards. The inappropriate exclusion of competent individuals may suggest a paternalistic intervention against patient's autonomy and free will. The need for balance between the protection of the psychiatric patient and the necessity to develop efficient and safe drugs proposes a framework that does not just pursue legal immunity but describes a more general moral attitude and scientific mentality.

S245

The effect of experimentally induced psychological stress on seminal parameters in healthy volunteers

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Background: Studies on the effects of psychological stress on male infertility have so far yielded equivocal findings [1, 2]. The majority of these studies were based on subjective assessments of chronic stress. The aim of this study was to determine the effect of experimentally induced acute stress on seminal parameters.

Materials and methods: Twenty healthy postgraduate medical students produced two semen samples. The first sample was obtained in the lab after an acute stress-inducing task, and the second one at home. The acute stress inducing protocol was based on the Trier Social Stress Test [3].

Results: Semen volume was significantly higher after acute stress, compared to semen volume at home ($p = 0.02$). Semen pH was significantly lower after acute stress, compared to semen pH at home ($p = 0.039$). A trend was observed for grade of motility to be higher after acute stress, than at home ($p = 0.059$).

Conclusions: This study was the first one to examine the effects of experimentally induced stress on semen parameters. The main limitation of the study concerns the small sample size. Findings suggest that exposure to acute stress influences semen parameters, possibly due to an increase in prostatic secretions, with a possible improvement in seminal parameters important for fertilization.

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S246

Objectively measured sleep quality and functional impairment in family caregivers of older adults with memory disorders

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Background: Poor sleep quality has been linked to functional impairment in several populations [1, 2, 3, 4] but this association has not been investigated widely in family caregivers of older adults with memory disorders. We investigated the association between objectively measured sleep and functional status in a sample of family caregivers.

Materials and methods: Participants were 42 caregiver-patient dyads. Caregivers completed the Beck Depression Inventory (BDI-II) [5] and the Medical Outcomes Study SF-36 [6]. The "physical function" subscale of the SF-36 measures difficulty lifting groceries, climbing stairs, etc. Scores range from 1 to 100; higher scores indicate better function. Caregivers completed 1 week of actigraphy—an objective means of measuring sleep by recording movement. We calculated their total sleep time (TST; mean time asleep while in bed) and sleep efficiency (SE; mean percentage of time asleep while in bed).

Results: Caregivers' mean age was 69.4 ± 13.6 years. Patients' mean age was 79.8 ± 7.6 years; their mean Mini-Mental State Exam [7] score was 21.3 ± 4.9 . Caregivers' mean physical function score was 72.6 ± 23.2 . In regression analyses (adjusted for age, self-rated health, and BDI-II), each 1-hour increase in TST was associated with a 5.7-point increase in physical function (Beta = 5.71, $p = .001$, R-squared = .75), and each 10% increase in SE predicted a 3.8-point increase in physical function (Beta = 3.79, $p = .02$, R-squared = .69).

Conclusions: In family caregivers, greater TST and SE were independently associated with better physical function after controlling for potential confounders. Future, longitudinal studies are needed to establish the directions of these relationships and to evaluate whether poor sleep might be a preventable cause of disability in caregivers.

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S247

Development of an animal model and a social behavior assessment scoring method for developmental disorders

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Background: Autism is recognized as a spectrum including Asperger syndrome and the disorder of social interaction is as central. Various behavioral and cognitive approaches to support autistic children and adults have been developed since the mid-1960s, for example, ABA (Applied Behavior Analysis), TEACCH (Trains and Education of Autistic and related Communication handicapped Children), and more recently RDI (Relationship Development Intervention) programs. These educational and therapeutic approaches, however, have been poorly shaded by the light of brain science on development of social empathy mainly because of lacking good animal model. Here we have introduced an animal model which allows us to investigate the correlation of social behavior and brain development.

Materials and methods: We used domestic chick (*Gallus domesticus*) and common marmoset (*Gallithrix jacchus*) as social behavior models, since both animals are visual-sensing dominant and rich in vocal communication like human. Domestic chick is a precautionary bird and suitable for investigating the development of peer relationship independent from parenting.

Results: We have established the behavioral assessment scoring method of chick and marmoset sociality based on

multidimensional vector space expression of behavior markers as variables. We found that chick learns social behavior through three different mechanisms, imprinting, predisposition, and synchronization through a common motivation.

Conclusions: Starting from chick behavior study, we have expanded the definition of sociality into marmoset behavior study with the aim of finding a common assessment scale for social empathy between human and other animals. Thus, we could explore the relationship between development of social behavior and brain structure/function.

Acknowledgements

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S248

Cognitive disorders in 6-hydroxydopamine-induced rat model of Parkinson's disease

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Background: Parkinson's disease is a human neurodegenerative disorder which is mainly characterized by a massive and progressive degeneration of the dopaminergic neurons in the substantia nigra (SN). The most widely used animal models of Parkinson's disease involve intracranial infusion of the neurotoxin 6-hydroxydopamine (6-OHDA) directly into the ascending dopaminergic forebrain bundle, thereby, inducing severe dopaminergic neuronal degeneration associated with profound deficits in feeding, drinking, sensorimotor and learning functions [1, 2, 3, 4]. The aim of the present work was to study the effects of right-unilateral 6-OHDA lesions of the ventral tegmental area (VTA) or substantia nigra pars reticulata (SNr) on learning and memory processes evidenced by means of Y-maze task and shuttle-box task, respectively. We also examined the effect of nicotine treatment on the 6-OHDA lesioned rats. Our data suggest that a correlation exist between VTA, SNr and nAChRS and expression of cognitive capacities.

Materials and methods: Male Wistar rats were subjected to right-unilateral 6-hydroxydopamine (6-OHDA) (8g/4l) lesions of the ventral tegmental area (VTA) or substantia nigra pars reticulata (SNr), or were sham lesioned, and nicotine treatment and their ability to acquire the operant task was studied by means of Y-maze task and shuttle-box task, respectively. For the lesioning of the SN the following coordinates were used: 5.5 mm.

Posterior to bregma; 2.0 mm lateral to the midline; 7.4 mm ventral to the surface of the cortex. For lesioning the VTA, the following coordinates were used: 5.6 mm.

Posterior to bregma; 0.5 mm lateral to the midline; 7.6 mm ventral to the surface of the cortex. The sham-operated rats were injected with saline. Learning and memory tests were began 2 weeks after the operation.

Results: Lesions of both VTA and SNr resulted in an impairment of both conditioned avoidance response and crossing latency tested by means of shuttle-box task, suggesting significant effects of long-term memory. 6-OHDA significantly decreased spontaneous alternation in Y-maze task, suggesting effects on spatial memory, especially on short-term memory. A low dose of nicotine (0.3 mg/kg b.w., i.p.), a specific nicotinic acetylcholine receptors (nAChRS), administered 4 consecutively days attenuated the impairment of learning and memory processes in 6-OHDA lesioned rats.

Conclusions: These data suggest that VTA, SN and nAChRS have a facilitator role in learning and memory processes. Therefore, the integrity of these nervous areas may be necessary for processing and storage of information.

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S249

Hepatitis C treatment in drug users: an approach in terms of evidence-based medicine

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Background: Recently a consensus was reached on the treatment of the HCV-infected, injection drug user (IDU) with pegylated interferon and ribavirin [1]. It is yet unclear as to whether these best-practice guidelines have been followed to good result due to multiple perceived barriers to treatment initiation.

Materials and methods: A systematic literature search in PubMed / MEDLINE, was performed. Peer-reviewed journal articles investigating barriers to treatment and therapeutic outcomes were retrieved and critically appraised. Twenty studies identifying issues related to treatment initiation and twenty-six studies presenting therapeutic outcomes were analyzed. Results are summarized and presented in evidence tables. Pooling and further statistical analysis was not justified because of heterogeneity of the identified studies.

Results: Despite being handicapped by negative views on treatment eligibility, clinical studies indicate that IDUs can be successfully treated for HCV, even in the setting of ongoing drug use. Rates of sustained virological response (SVR) were similar to control groups while patient compliance, treatment adverse effects and potential re-infection didn't have a significant impact on the therapeutic outcome. Therapy can be initiated during the early phase of drug treatment, regardless of the drug treatment strategy.

Conclusions: The evolving body of medical evidence indicates that IDUs can be effectively treated for HCV despite the persistence of putative, psychosocial barriers to treatment. Our approach to an addicted patient who needs HCV treatment, should not be clouded by perception or prejudice, but instead focus on patient education, interdisciplinary collaboration and close monitoring of the appropriate biological treatment.

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S250

Bulgarian version of TEMPS-A preliminary announcement

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Background: The most pure definitions to describe the human individuality are temperament and character. Actuality of modern groupings into temperamental traits is legalized by conception of H. Akiskal, that linked temperamental structure and affective disorders.

Materials and methods:

Aim: Approbation of Bulgarian version of TEMPS-A (Temperament Evaluation of the Memphis, Pisa, Paris, and San Diego Autoquestionnaire).

Material and Methods: In the current study were examined 523 healthy volunteers, male and female, between 18–45 years old. The study population was randomly selected and includes university students, high-school students, soldiers, employees and workers from different areas. A part of the population was examined again 45 days after first one regarding test-retest. Instruments: TEMPS-A, EPQ, Screening IPDE, MPDO.

Results: The text of the questionnaire was translated by one of the investigators and back-translation was performed by independent professional translator. The full approval for the Bulgarian version of the questionnaire was obtained by the author.

The test-retest had applied for a part of the study population. The retest had performed again 45 days after first one regarding temporal reliability. The results demonstrate excellent correlations by test at all and by five dimensions separately.

Analysis of the principal components with a Varimax rotation confirmed that the 110 Bulgarian items of the TEMPS-A are distributed within the Akiskal's five factors.

Conclusions: TEMPS-A showed a good reliability and validity (internal consistency) in a Bulgarian non-clinical population. It gives us a new challenge to understand affective disorders nature and opportunities to measure it. Such research is in progress.

S251

Evolutionary neural circuits and their relevance in current psychiatry: "are we still connected with the Cosmos"

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Background: Human brain has evolved into complex network of neural circuits because of its interaction with the physical environment, social cognition and adaptive interpersonal behavior. While some researchers talk about influence of environmental variables on mental illness others talk of implications for the reclassification of DSM-V based on the neural-circuitary traits.

Objective: The aim of this paper is to (1) present a short review of literature on the various evolutionary neural circuits and their clinical significance (2) examine the influence of environmental/geophysical variables on outpatient (OP) attendance, a proxy variable for onset of mental illness.

Materials and methods: A literature search was conducted within the Pubmed/ Medline to identify articles on neuro-evolutionary circuits and geophysical variables and their influence on psychiatric disorders. Clinical case records of 30,195 OP attendance between 1990 and 2001 (corresponding to the last sun spot cycle) were reviewed to identify drug naive, acute onset, psychiatric episodes. Diagnoses of interest, non-affective psychoses, mania, depression and minor mental disorders (MMD), were tested for an association with various geophysical variables including radiofrequency radiations (RFR) and geomagnetic activity (GMA); a function of charged particles of solar radio flux.

Results: A total of 17.9% of our sample met the inclusion criteria and grouped into various diagnoses. The variable most significantly ($p < 0.05$) associated was solar radio flux (RFR) below 800 MHz which affected all the diagnostic groups. Spectral analysis showed an inverse trend between the psychiatric OP attendances and the radio frequency radiations. Graphically the RFR wave and depression/psychosis waves rise and fall at least twice in a year. Peak attendances of depression and psychoses graphs follow the RFR peaks by about a month.

Significant relationships notwithstanding, the percentages of variance accounted for by different geophysical variables were very small.

Conclusions: Notwithstanding a bipolar connection several psychiatric disorders, including personality disorders have a cyclical or episodic pattern probably because of the resonance between the evolutionary neural circuits and the cyclical activity of geophysical variables such as RFR. As the solar dust begins to settle, it is perhaps pertinent to ask whether the human brain resonate with the cosmos, is this philosophical thought worth pursuing, if so, in what way does it help in bridging the organic-functional divide or whether newer and alternative strategies needed to understand this 'chaos'.

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S252

Improving psychiatric care of older medical inpatients: development of a special integrated medical-psychiatric unit

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Background: Psychiatric co-morbidity in geriatric patients hospitalized for somatic conditions is associated with an

increase in adverse outcomes and a longer length of stay. In order to address this issue, we developed a special 8-bed medical-psychiatric unit in our Geriatrics Hospital.

Materials and methods: Admission criteria include the presence of a somatic disorder that requires inpatient care associated with an acute psychiatric disorder. Individuals with significant cognitive impairment or who require involuntary admission to a psychiatric institution are excluded. The geriatric multidisciplinary team is reinforced by two full-time nurses specialized in psychiatric care and a part-time (50%) senior psychiatrist. Medical, psychiatric and geriatric multidisciplinary care is provided. This descriptive study evaluates diagnoses, length of stay and acceptance by patients, family and staff.

Results: 35 patients were admitted during the first semester of 2007. Mean (34,2) and median (35) length of stay in days were similar to that of other units. 20 patients returned home, 4 to a nursing home, 5 were transferred to a psychiatric unit and 5 to a long-term care unit. One patient died. Psychiatric diagnoses (ICD-10 criteria) included depressive disorders (20), substance-related disorders (5), personality disorders (5), bipolar disorders (4) and one post-traumatic syndrome.

Conclusions: Initial evaluation indicates that this new unit is well accepted and integrated in our acute care geriatric hospital setting. Early positive outcomes including the fact that the length of stay is comparable to other units are encouraging. However, further evaluation of this model of care is warranted before this approach can be generalised to multiple acute care settings.

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S253

Inadvertent hospitalization – association between diagnosis and age

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Background: This study describes the most common causes that influence the judgment (consciousness) of a psychic patient to comprehend their pathological status in order for them to willingly ask for their hospitalization.

Therefore it is only the District Attorney who can ask for their hospitalization after the patient's relatives' application.

Additionally we study the age in which most inadvertent hospitalizations occur.

Materials and methods: We studied 442 inadvertent hospitalizations in a private psychiatric institute during the period of 2000–2006.

We categorized the patients into three categories.

The first category was consistent by inadvertent admitted patients, after being diagnosed of schizophrenic disorder or psychosis, the second category was consistent by patients admitted after being diagnosed of bipolar disorder or schizoaffective disorder and the third category was consistent by patients diagnosed of organic-psychotic syndrome.

Results: 352 patients (percentage 79,63%), were inadvertently admitted by the diagnosis of schizophrenia or psychotic disorder, 80 of them (percentage 18,10%) by the diagnosis of bipolar or schizoaffective disorder and 10 of them (percentage 2,27%), by the diagnosis of organic- psychotic syndrome.

96 patients (21,72%) were between 20–30 years old, 173 (39,14%) between 31–40 years old, 91 (20,58%) between 41–50 years old, 48 (10,8%) between 51–60 years old and 34 (7,70%) between 61–70 years old.

Conclusions: The severe psychotic incidents of the schizophrenic range are the most common cause of inadvertent hospitalization and follow the incidents of bipolar disorder, while in the ages of 31–40 most inadvertent hospitalizations take place.

S254

Psychosis in a multiple sclerosis patient and antipsychotic treatment

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Background: Multiple sclerosis (MS) is a central nervous system demyelinating disease usually diagnosed on the basis of typical neurological symptoms and signs, clinical course, and laboratory and neuroradiological findings. Psychiatric symptoms and disorders frequently co-occur in MS.

Materials and methods: We examined the evidence of correlation between relapses of the comorbid psychosis in a multiple sclerosis (MS) patient and progression of the disease. This case report also deals with the antipsychotic treatment and his necessary modifications.

Results: We present a case of a 35 years old male affected by multiple sclerosis in the last 6 years under treatment with interferons. One year after the diagnosis of the demyelinating disease, the patient developed psychiatric manifestations and he referred to a psychiatric clinic where was formulated the diagnosis of psychosis. There was no family or personal history of psychiatric disease or psychotropic medication/substance use. The patient initially has been treated with risperidone and with an exception of a relapse, because of non-compliance, has been almost stable for about 5 years. At the age of 35 years he has been recovered to our clinic due to a severe exacerbation of the psychosis which persistent symptoms led to a change of the antipsychotic treatment. Initially he began on sertindole for one month with poor response. Thus he has changed treatment and

the following administration of clozapine had as a result the remission of the symptoms.

Conclusions: The progression of the MS frequently comports exacerbation of the symptomatology of the comorbid psychosis. Clozapine seems to constitute a valid treatment.

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S255

Significance of omega-3 polyunsaturated fatty acid administration in the therapeutic approach of depression in hemodialysis patients

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Background: According to various reports and clinical studies mental disorders represent a frequent sequela of chronic diseases. In end stage renal disease, in particular, mood disorders and more specifically major depression is met with a frequency of 20-30% and is the most widely acknowledged abnormality [1]. As a consequence, overall quality of life as well as treatment compliance is severely impaired [2]. Omega-3 (Ω3) polyunsaturated fatty acids (PUFAs) have been shown to reduce the risk and to treat mental disorders including depression [3]. However, evidence to date, remains obscure and recommendations must be given with caution [4]. The aim of the present study was to evaluate the significance of Ω3 administration in the treatment of depressive maintenance hemodialysis (HD) patients.

Materials and methods: Forty-five (n = 45) patients, 32 male and 13 female, mean age 59.7±16.2 years, on maintenance HD were recruited. Using the Hamilton Depression (HAMD) Scale, participants mood was evaluated at baseline. According to HAMD scoring, patients were subdivided into two groups. Group A comprised 29 patients with score 0-7 (absence of depression), whereas group B included 16 patients scoring higher than 7 (clinically significant depression). Subjects were further evaluated in terms of socioeconomic, clinical, laboratory parameters and presence of sleep disorders (as assessed by Athens Insomnia Scale, AIS). Depressive patients (group B), received 1 gr of Ω3 PUFAs (eicosapentaenoic acid and docosahexaenoic acid) daily for a study period of 16 weeks, at the end of which mental status, social and medical parameters were reassessed.

Results: Fourteen out of 16 participants completed 16 weeks of treatment, one patient received a renal transplant and one refused to comply. Non-significant changes of serum creatinine, serum urea, electrolytes, albumin and haemoglobin levels were observed during the intervention period. Total serum cholesterol, serum triglycerides, LDL-C and VLDL-C levels decreased at 16 week, although changes were not statistically significant. Furthermore, serum HDL-C levels significantly increased from 36.0±8.87 mg/dl at baseline to 39.6±8.93 mg/dl at week 16 (p = 0.002). Most importantly, there was a significant improvement in the mood of participants, as evidenced by the reduction of mean HAMD scores from 16.64±6.39 to 13.79.69 ±6.07 (p = 0.001). On the other hand, Ω3 PUFAs did not seem to influence sleep disturbances since no alteration in patients AIS scores were observed throughout the study period.

Conclusions: We conclude that administration of Ω3 PUFA could be associated with a clinically significant mood improvement in patients with end stage renal disease and depression. Further research is required to elucidate the role of polyunsaturated Ω3 fatty acids as sole or as an adjuvant therapeutic modality in the treatment of depressive maintenance hemodialysis patients.

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S256

Premorbid development in twins with schizophrenia

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Background: Premorbid developmental abnormalities have often been reported in patients with schizophrenia but it is not clear whether these are genetic or environmental in origin.

Materials and methods: Twin pairs ($n = 77$) varying in their concordance and zygosity for schizophrenia were assessed for premorbid adjustment and personality. We used bivariate genetic model fitting techniques to quantify the genetic relationship between schizophrenia and developmental abnormalities and to estimate the heritability of these traits.

Results: Premorbid deficits in adjustment and personality were associated with schizophrenia. Heritability estimates were greatest for adolescent developmental abnormalities and schizotypal personality traits, while significant genetic and phenotypic correlations for each were detected with schizophrenia.

Conclusions: Premorbid abnormalities of adjustment and personality are detectable in those who will later develop schizophrenia. These deficits reflect the shared influence of the genetic risk for schizophrenia, and could consequently act as endophenotype markers for the disorder.

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S257

Effect of valproic acid and azadirachta indica on behavioral alterations and antioxidative stress in pentylenetetrazol-induced kindling in rats

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Background: The present investigation was designed in order to clarify the effects of valproic acid and azadirachta indica on seizures and antioxidative enzymes in pentylenetetrazol-induced epilepsy.

Materials and methods: Forty Sprague Dawley strain male rats were taken and divided into four groups, containing ten animals each. Group A (Vehicle): They received injections of normal saline intraperitoneally (i.p.) daily for the period of six weeks; Group B (PTZ): Pentylenetetrazol (PTZ, 40 mg/Kg) was injected to them i.p. for inducing chemical kindling on alternate days; Group C (PTZ + Valproate): Pentylenetetrazol (PTZ, 40 mg/Kg) was injected to them i.p. for inducing chemical kindling on alternate days and Valproic acid (VPA, 200 mg/Kg) was administered to them orally as an anticonvulsant daily and Group D (PTZ + Neem): Pentylenetetrazol (PTZ, 40 mg/Kg) was injected to them i.p. for inducing chemical kindling on alternate days and Azadirachta indica (Neem, 100 mg/Kg) was given to them orally also as an anticonvulsant daily. Seizure severity was measured according to a prevalidated scoring scale. Kindling score was recorded regularly after PTZ administration during the whole experiment. Mean onset time of jerks, clonus and extensor phases following PTZ challenge was noted. At the end of six weeks, all animals were sacrificed and different antioxidative enzymes activity such as Glutathione S transferase, Catalase, Glutathione Reductase and Nitric oxide were measured in brain spectrophotometrically. Lipid peroxidation activity was also measured in brain.

Results: Decrease in Seizures severity in Groups C (PTZ + Valproate) and Group D (PTZ + Neem) was observed as compared to Group B (PTZ). Decrease in Lipid peroxidation enzymes, Glutathione S transferase activity, Catalase and Nitric

oxide activity was observed in Groups C (PTZ + Valproate) and Group D (PTZ + Neem). However, increase in the activity of Glutathione Reductase was observed in the same groups. Due to this finding, we suggest that the usage of VPA and Neem, in epilepsy might protect brain against anoxic damage and oxidative stress due to prolonged seizures.

Conclusions: It was also concluded in the present study that Azadirachta indica has more preventive effects than Valproic acid on PTZ induced chemical kindling in rats.

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S258

A comparative study on the influence of estrous cycle on cognitive and coping behaviors in rats

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Background: Although, it is recognized that ovarian steroids can modulate brain mechanisms of learning, memory and perceiving novel object recognition, however, particular influences of the ovarian steroid status on behavioral strategy responses to novelty and to the partial or whole acquired fearful cues have not been evaluated yet.

Materials and methods: The present study was investigate the influence of estrous cycle in adult female Wistar rats on the responses to emergency novelty by using an open field (OF) and on the recognition of fearful partial or whole cues presented during testing in the passive avoidance (PA) apparatus. In conditioning task, rats received a single shock (1 mA) following a 30-s preshock exposure period to the shock associated context of the PA. Estrous cycle phases were determined by vaginal lavage.

Results: OF test showed that female rats in estrus preferred to use active coping strategy. They spent significantly longer time in the center of the apparatus ($P < 0.05$) and showed upward exploration to the extra-maze cues, expressed as increased free fears ($P < 0.05$). PAC test showed that female rats in estrus status is less attendant to the partial fearful cues, expressed as decreased freezing ($P < 0.001$), compared to that in pro-estrus status and had more attempt to enter to the shocked section ($P < 0.05$).

Conclusions: The present study provides evidence that ovarian steroid status influences behavioral coping strategy and perceiving cues related with novelty and fear but not affect non-associative and associative learning and memory retrieval.

S259

Association study between late onset Alzheimer's disease and genes implicated in the A β metabolism in Mexican patients

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Background: Alzheimer Disease (AD) is clinically characterized by global, progressive and irreversible loss of mental faculties. Neuropathologically is characterized by neurofibrillary tangles and neuritic plaques; composed mainly by Amyloid β -peptide (A β). Generation, aggregation and degradation of A β represent three important steps to be considered in the study of the pathological mechanisms implicated in AD. Several genes have been suggested as implicated in each of these processes: Beta-site amyloid-precursor protein cleaving enzyme (BACE) in generating, Apolipoprotein E (APOE) in aggregation, and urokinase-type plasminogen activator (PLAU), involved in degradation; have been exhaustively documented [1]. This is the first study in Mexican population that analyzes genetic risk factors related to AD.

Materials and methods: A case-control study was design to evaluate the possible association between candidate genes involved in these three processes with AD. Data collection was performed from 49 patients with AD and 50 controls. We analyzed alleles and genotype distributions for APOE (ϵ 2/ ϵ 3/ ϵ 4), 2 APOE promoter polymorphisms -219 G/T and -491 T/A, ISNP located in exon 5 of the BACE-1 gene (G/C), and one (C/T) polymorphism in exon 6 of the PLAU gene.

Results: We found different allele and genotype frequencies for all SNPs analyzed between cases and controls with exception for -491 T/A. Association was found for the APOE ϵ 4 allele (OR = 2.42), -219 TT genotype (OR = 1.77), CC genotype of BACE-1 (OR = 1.88) and TT genotype of PLAU (OR = 2.10).

Conclusions: These data suggest a genetic association between APOE (ϵ 4), -219TT, BACE-1 (CC), and PLAU (TT) genotypes with AD in Mexican population.

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S260

Ethnicity, steroid hormones, and pain perception

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Background: The purpose of this study was to examine the relationship of steroid hormones to pain sensitivity in African Americans (AAs) and non-Hispanic Whites (nHWs).

Materials and methods: Ninety-one medically healthy men (24 AAs, 21 nHWs) and women in the late follicular phase of their menstrual cycles (26 AAs, 20 nHWs) were tested for voluntary threshold and tolerance to ischemic (IS), thermal heat (TH), and cold pressor (CP) pain. Blood was sampled after a rest period for serum testosterone and progesterone (females).

Results: In nHW men testosterone was directly related to IS threshold and TH tolerance (r s = +.61 and +.56, p s < .05). In nHW women testosterone was inversely related to IS threshold (r = -.45, p < .05). In nHW women progesterone was also inversely associated with IS tolerance and TH threshold and tolerance (r s = -.44 to -.56, p s < .05), and IS threshold (r = -.41, p < .06). There were no relationships between pain sensitivity and testosterone or progesterone in AAs.

Conclusions: This is the first study in humans to document a relationship between testosterone and pain sensitivity, which may be mediated by neuroactive metabolites of testosterone [1]. The relationship between progesterone and pain sensitivity in nHW women may explain findings on menstrual cycle and pain sensitivity [2, 3], and also fits with our previous report that increased allopregnanalone, a neuroactive metabolite of progesterone, is associated with increased pain sensitivity [4]. The results suggest ethnic and gender differences in putative steroid hormone regulation of pain perception.

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S261

Nitric oxide modulates the antidepressant-like effect of acute lithium administration in the mouse forced swimming test

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Background: Lithium has largely met its initial promise as the first drug to be discovered in the modern era of psychopharmacology, yet no definitive mechanism for its effect has been established. In the present study we evaluated the involvement of L-arginine/nitric oxide (NO)/cGMP pathway in the antidepressant-like effects of acute lithium administration in the mouse forced swimming test (FST).

Materials and methods: Male NMRI mice weighting 23–30 g (Pasteur Institute) were used throughout the study. The FST was conducted using the method of Porsolt [1]. The locomotor activity was also evaluated by an open-field test.

Results: Lithium, at 30 and 100 mg/kg, significantly reduced the immobility times of mice in the FST, whereas at lower doses (0.5, 5 and 10 mg/kg) had no effect on the immobility time. The NO synthase (NOS) inhibitor NG-nitro-L-arginine methyl ester (L-NAME), at 10 and 30 mg/kg, and the selective neuronal NOS inhibitor N ω -propyl-L-arginine (L-NPA), at 5 and 15 mg/kg, had no significant effects on the FST, whereas they significantly decreased the immobility time at 100 and 30 mg/kg, respectively. Combination of non-effective dose of lithium (10 mg/kg) with low doses of L-NAME (30 mg/kg) or L-NPA (15 mg/kg) significantly reduced the immobility times in the FST. Moreover, the guanylyl cyclase inhibitor ODQ at 50 mg/kg significantly decreased the immobility time of mice, whereas it had not significant effects on the FST at 2, 10 and 20 mg/kg. Combination of lithium (10 mg/kg) with 20 mg/kg ODQ significantly decreased the immobility times in the FST. Non-effective doses of L-arginine (750 mg/kg) or sildenafil (5 mg/kg) significantly reversed the antidepressant-like effect of 30 mg/kg lithium in the FST. Neither of the drugs had effect on the locomotor activity.

Conclusions: These data indicate the involvement of L-arginine/NO/cGMP pathway in the antidepressant-like effect of lithium in the mouse FST and also might suggest the concurrent administration of NOS inhibitors and lithium as an appropriate strategy for treatment of depression.

Acknowledgements

M Ghasemi will hopefully present this study.

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S262

Clinical correlates of mental dysfunction in Parkinson's disease without dementia

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Background: Parkinson's disease (PD) comprises a range of motor and cognitive disturbances, a portion of which respond little, if at all, to levodopa treatment and are therefore considered to be due to nondopaminergic lesions [1, 2]. More severe cognitive impairments and higher risk for developing dementia have been associated with the clinical manifestations of postural instability and gait disorder which are characterized by refractoriness to levodopa [2, 3].

Materials and methods: A consecutive series of non-demented PD patients referred to our tertiary care centre received a comprehensive neurological and neuropsychological evaluation in their "on" state. Strict inclusion criteria were applied in order to avoid the influence on cognitive outcomes of factors other than the clinical status of patients. The Unified Parkinson's Disease Rating Scale (UPDRS) motor score was divided into 2 subscores that represented predominantly dopaminergic (subscore A: tremor, rigidity, bradykinesia and facial expression) and nondopaminergic (subscore B: speech and axial impairment) deficiency. Overall cognitive status was rated with the Mini-Mental State Examination (MMSE) and the presence of depressive symptoms with the Beck Depression Inventory - Fast screen. A neuropsychological test battery was further administered to each patient to assess cognitive domains known to be affected even in the early stages of PD, which included the Rey Auditory Verbal Learning Test (RAVLT) (verbal memory), the Trail Making Test (TMT) part B and the Stroop Neuropsychological Screening Test (executive functions), the Line Orientation Test (visuospatial perception), as well as the TMT part A and the Symbol Digit Modalities Test (psychomotor speed and attention). In addition, the intersecting pentagon copying item within the MMSE was graded using a 0–2 rating scale (visuoconstructional ability). Stepwise multiple regression analyses were performed in order to model the effect of clinical parameters on cognitive measures. The predictor variables included age, age at onset of disease, years of education, depression score, daily dose of levodopa, subscore A and subscore B.

Results: A total of 42 patients (22 males, 20 females) with a mean age of 64.9 \pm 10.1 years, age at onset of PD of 58.2 \pm 11.1 years, PD duration of 6.6 \pm 5.3 years and education of 9.2 \pm 4.2 years were included. The best predictors of neuropsychological performances were age, age at onset of symptoms and years of education. Subscore A accounted only for an additional 6.9% ($p = 0.038$) of the variation of the RAVLT trial 3 and subscore B for an additional 5.5% ($p = 0.043$) of the variation of the TMT part B, while both subscores were excluded in models of all other measures.

Conclusions: Cognitive decline in PD patients might be owing to the simultaneous effect of age-related and disease-associated neuropathology. Development of impaired postural reflexes and gait difficulties in patients does not appear to be closely related to cognitive dysfunction, at least prior to dementia.

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S263

Involvement of female sex hormones in the cannabinoid-induced catalepsy and analgesia in ovariectomized mice

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Background: Cannabinoids are psychoactive compounds with many pharmacological properties such as analgesia, sedation and catalepsy most which are mediated by CBI receptors. In the present study, we evaluated whether the ovarian sex hormones are involved in the cannabinoid-induced catalepsy and analgesia in ovariectomized (OVX) female mice.

Materials and methods: Female swiss mice (weighing 25–30 g) were divided into 3 main groups: unoperated, sham-operated and OVX. Both the catalepsy and analgesia induced by different doses of synthetic cannabinoid WIN 55,212-2 (2 and 4 mg/kg, i.p.) were examined in three groups in the presence or absence of the CBI antagonist AM251. We also evaluated effects of estradiol and progesterone on catalepsy and analgesia induced by WIN 55,212-2 in OVX group.

Results: WIN 55,212-2 caused ($P < 0.001$) catalepsy and analgesia in three groups in a dose-dependent manner which was inhibited by AM251 ($P < 0.001$). Pretreatment with estradiol caused no effect on cannabinoid-induced catalepsy or analgesia in OVX group. However, progesterone exerted a strong enhancing effect ($P < 0.05$) on catalepsy or analgesia induced by low dose WIN 55,212-2 in OVX mice.

Conclusions: The present data demonstrated for the first time that ovarian female hormone progesterone is involved in both cannabinoid-induced catalepsy and analgesia in female mice.

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S264

Effects of female sex hormones on morphine dependence

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Background: Sex hormones have a variety of neurobehavioral effects including modulatory roles in anxiety and memory. It also has been shown that female sex hormones can alter some of the modulatory effects of opioids, such as morphine on seizure susceptibility. Thus, we conducted this study to evaluate the effects of female sex hormones on morphine dependency using a behavioral model of morphine withdrawal.

Materials and methods: Female swiss mice (weighing 25–30 g) were divided into 3 main groups: unoperated, sham-operated and operated (OVX). Morphine dependence was induced in mice by repeated injection of increasing morphine doses for 5 days. Then animals were assessed for dependency using the behavioral model of naloxane-induced withdrawal (jumping behavior and diarrhea). Also, the effects of ovarian hormones (estradiol and progesterone) on dependency to morphine were assessed in OVX mice.

Results: Ovariectomized mice had significant decrease in jumping ($p < 0.01$) and significant increase in weight loss ($p < 0.001$) compared with appropriate control groups. Pretreatment with physiologic doses of estrogen and progesterone significantly increased jumping response and decreased weight loss ($p < 0.001$) compared to non-hormone receiving operated mice.

Conclusions: Our results demonstrated that female sex hormones are possibly involved in morphine dependence. More studies are needed to find the underlying mechanism(s) of this effect.

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S265

Effects of male sex hormones on morphine dependence

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Background: Androgenic steroid (testosterone) has different neurobehavioral effects including sexual behaviors, rewards, learning and locomotor activity. Moreover opioids and opioid receptors are highly expressed in the brain regions which mediate both reward and reproductive behaviors. Thus, we investigated the effect of male sex hormones on morphine dependence.

Materials and methods: Male swiss mice (weighing 25–30 g) were divided into 3 main groups: unoperated, sham-operated and orchidectomized (ORC). Morphine dependence was induced in mice by a repeated injection of increasing doses of morphine for 5 days. Then, dependency was assessed using the behavioral model of naloxan-induced withdrawal (jumping behavior and diarrhea). Also, the effect of male hormone (testosterone) in dependency to morphine was assessed in ORC mice.

Results: Obtained results, indicate that gonadectomized mice had a significant decrease in the number of jumps compared with non-operated groups ($p < 0.001$). However there were no significant changes in the mean weight loss. Pretreatment with physiologic dose of testosterone in ORC mice caused a significant increase in jumping but had no effects on weight loss in compare with the appropriate control group.

Conclusions: The results show that the sensitivity of brain opioid systems, controlling some of the behavioral effects of morphine, is influenced by testosterone. More studies are needed to find the underlying mechanism(s) of this effect.

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S266

The importance of the genealogic tree or pedigree build and study in genetic counseling – case report

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Background: Determination of the genetic basis of a character from the kinds of crosses we have considered requires the production of large numbers of offspring from the matting of selected parents. The analysis of segregation by this method is not possible in humans, whose matings can't be controlled and is not usually economically feasible for some traits in large domestic animals. However, the mode of inheritance of a trait can sometimes be determined by examining the segregation of alleles in several generations of related individuals. This is especially done with a family tree that shows the phenotype of each individual. Such a diagram is called pedigree or genealogic tree. An important application of probability in genetics is its use in pedigree analysis, a stage in genetic counseling.

Materials and methods: To realise a pedigree of an individual or a family, it's a necessity to gather data about the family or individual. We studied a very interesting case in which are involved four individuals with Down syndrome.

Results: We presented a genealogical tree of J.family. One of the member of this family asked genetic counseling. We observed that she had a secondary cousin (a girl) with Down syndrome, and two cousins (men) who have children with Down syndrome, and a cousin (female) who has a child with this syndrome. We demonstrated after genetic counseling with all the phases involved, that in this family the Down syndrome has occurred because of the propensity to 21 chromosomes non-disjunction. The studied case it isn't in danger to have a child with Down syndrome because the genetic propensity is from the ant (wife of father's cousin).

Conclusions: To realise a pedigree of an individual or a family, it's a necessity to gather data about the family or individual. The

data about family are systematized in pedigree or genealogic tree of the family. Analysing the pedigree of a family, we can say that some traits are inherited or not. Also, we can anticipate some normal or abnormal traits of individuals of the next generation. The studied case it isn't in danger to have a child with Down syndrome because the genetic propensity to 21 chromosomes non-disjunction is from the ant (wife of father's cousin).

S267

Social and economic aspects in the families with mentally retarded children

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Background: Mental retardation is a developmental disability that first appears at children under the age of 18. Because of the complexity of human body, there are many questions about the causes of mental retardation appearance.

Materials and methods: To realise this study, we investigated 596 children hospitalized on period of 1999-2001 in Neuropsychiatry Infantile Section of Neurology and Psychiatry Clinical Hospital from Oradea. Among these, 393 have different types of mental retardation. We realised family investigation and followed the hereditary antecedents, the harmful factors, alcohol consumption by mother, smoking and social and economic situation of families with mentally retarded children.

Results: Among 393 cases with mental retardation from studied group, 136 present at least one harmful factor in their family. In the group of mentally retarded children, this represents a rate over 34%. We observed increased rates of many previous pregnancies of mother, precarious economic situation and alcohol consumption. The rate of cases with severe mental retardation who present harmful factors in family is lower than rate of cases with moderate mental retardation, but higher than rate of cases with mild mental retardation. This may be an argue for the hypothesis which claims that severe mental retardation is caused in very important share by genetic factors. The results show that a quarter from the cases without antecedents and harmful factors in their families proceeded from orphanages or other shelter institution. So, we can't be sure about the etiology of mental retardation of these children. Among 393 mentally retarded children, 70 (17,8%) are gipsies.

Conclusions: Results are very meaningful and they show the importance of precarious living level in the families with mentally retarded children. The precarious living level affects the physical and psyhical health of these children. Also, there is a very high tragic rate of illiteracy in families with mentally retarded children. Many previous pregnancies, precarious economic and social situation and alcohol consumption by mother are the most important harmful factors which determine different types of mental retardation. Many of children who proceeded from orphanages or other shelter institutions have parents without jobs, or they are a result of unwished pregnancies of women

with a subcultural level. Many of those children proceeded from parents who have themselves different types of mental retardation and aren't capable to rise a child. Harmful factors, family antecedents, age of parents and genetic factors work together or separately in determination of mental retardation.

S268

Cognitive impairment among outpatients whose first complaint was memory disorder

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Background: Failure to detect cognitive impairment can result in a domino effect of medical and psychosocial problems, while cognitive dysfunction can have a significant impact on decision-making capacity [1].

Materials and methods: A retrospective study was carried out among 126 outpatients aged 74.5 ± 7.6 years old, seen in the Neurology Department of Venizeleion General Hospital of Heraklion, between April 2005 and May 2007. A complete history, physical and neurological examination, CT scanning and neuropsychological tests including the Mini-Mental State Examination (MMSE) [2], the Clock Drawing Test (CDT - the Sunderland method) [3], the Geriatric Depression Scale (GDS) [4] and the Instrumental Activities of Daily Living Scale (IADL), were performed.

Results: 61.1% of patients showed cognitive impairment (MMSE < 24), while 74.6% revealed with CDT (score < 6). According to the MMSE and the CDT, there wasn't a statistical significant correlation between cognitive impairment and gender or educational level; a statistically significant difference ($p < 0.05$) was found in relation to the age according the CDT, but not with the MMSE. We found a moderate correlation ($r = 0.408$) between functional disability (IADL score) and the CDT. 11.7% of men and 9.1% of women had mild or moderate depression (GDS?7), but there were not statistically correlated with cognitive impairment or functional disability ($p > 0.05$).

Conclusions: Memory complaints must be carefully assessed, as these results reaffirm that there is a high prevalence of the studied mental disorders in outpatients and especially in elderly. The CDT seems to be even more sensitive in revealing cognitive impairment in patients who have an MMSE within the normal limits.

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S269

Personal time and psychopathology

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Background: Time plays an essential role in differentiating among individuals. Each person has a characteristic way of experiencing time and using it.

Materials and methods: This study examined the role of personal time perspective and personal temporal experience in the occurrence of depressive, anxiogenic and somatization symptoms. A sample of 230 subjects of both sexes, aged between 25 and 60 years, was used. The following instruments were used: Temporal Experience Questionnaire, Time Perspective Inventory and the Symptom Checklist 90.

Results: Results show that subjects who are most likely to display frequent symptoms of depression, anxiety and/or somatization are those who are oriented towards negative aspects of their life in the past and/or view their present in a fatalistic or hedonistic way.

Conclusions: Furthermore, the occurrence of the mentioned symptoms is less probable for subjects who are oriented towards their future, organize their activities into time slots and perceive a high degree of control over their time.

S270

The implication of irrational thinking in suicidal risk for depressed and non-depressed population

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Background: In this paper we studied the influence of Ellis's irrational beliefs (awfulizing, "must", self downing and low frustration tolerance) on suicidal risk. From a cognitive point of view the most important factor in suicide is the way in which people view their life experiences. Ellis suggests that unrealistic

demands from the world and self are a key factor in suicide ideation.

Materials and methods: A sample of 156 subjects (males and females) was used. This sample was divided into two subsamples, one composed of depressed subjects, and another composed of non-depressed subjects. The Attitudes and Beliefs scale II was used to assess the subjects' level of irrational thinking and the Beck Hopelessness Scale was used to measure suicidal risk.

Results: The obtained results support the idea that irrational beliefs (awfulizing, "must", self downing and low frustration tolerance) are crucial factors in suicidal ideation and behavior for both non-depressed and depressed subjects.

Conclusions: It seems that awfulizing and "must" are factors that are more important for the non-depressed population and that a high level of low frustration tolerance is a very good predictor of suicidal ideation.

S271

Cognitive vulnerability indicators in bipolar disorder and schizophrenia

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Background: The aim of this project was to investigate the cognitive abnormalities in healthy individuals (No Axis I or II disorders) at high risk for bipolar disorder (BD) and schizophrenia (SZ).

Materials and methods: Participants were 17 BD and 15 SZ relatives (BD-R and SZ-R) respectively and 23 controls. All participants underwent assessment of Full Scale IQ (Wechsler Adult Intelligence Scale Revised, WAIS-R), verbal memory and learning (California Verbal Learning test, CVLT), working memory (N-back), inhibition (Hayling Sentence Completion Task, HSCT), verbal fluency (Controlled Oral Word Association, COWA), working memory and inhibition (alphabet and number words tasks). Lack of lifetime Axis I and II disorders was screened using Structured Clinical Interview for DSM-IV (SCID-I/II) and symptomatology was assessed with the Hamilton Depression Rating Scale (HDRS), Young Mania Rating Scale (YMRS) and Brief Psychiatric Rating Scale (BPRS).

Results: No difference was found in the WAIS-R. Loss of inhibition was found for both relatives' groups compared to controls (HSCT). BD-R and SZ-R underperformed compared to controls in short and long delay recall in the CVLT (CVLT) whereas SZ-R made additionally more intrusions and perseverations. SZ-R and BD-R produced fewer words compared to controls whereas the former group also made more errors (COWA). The SZ-R had fewer total correct responses overall and in the 3-back condition. In Alphabet and number words tasks the SZ-R failed to inhibit relatively fast erroneous responses, leading to an effect on error rates but not in reaction times. Effect of BPRS total score was found only for BD-R across all measures apart from the HSCT.

Conclusions: Genetic predisposition to SZ may be mediated by deficits in the Ventral Prefrontal Cortex (VPFC), Dorsal Prefrontal Cortex (DPFC) and temporal networks. In BD-R impairment was limited in the VPFC whereas the DPFC function was preserved. The two disorders share inhibition deficits associated with the VPFC.

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S272

Vulnerability indicators in bipolar disorder

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Background: Trait cognitive dysfunction in Bipolar Disorder (BD) may be an expression of genetic vulnerability. The aim of this project was to delineate core cognitive deficits in unaffected BD siblings and offspring.

Materials and methods: We recruited 75 unaffected relatives and 71 controls. 33 had lifetime (23 offspring and 10 siblings) diagnoses of major depressive disorder (n = 21), anxiety disorders (n = 4), substance abuse (n = 11) and eating disorder (n = 1). All participants underwent assessment of their general intellectual ability, memory, working memory, response inhibition and emotional learning (EL). Level of symptomatology was assessed using Hamilton Depressive Rating Scale (HDRS), Young Mania Rating Scale (YMRS) and Brief Psychiatric Rating Scale (BPRS). We conducted two analyses; one with whole sample siblings and offspring and another including asymptomatic ones defined as scoring 24 on the BPRS.

Results: Whole sample: Siblings analysis: Compared to controls (a) Healthy siblings showed deficits in inhibition and EL (b) Siblings with a lifetime diagnosis were additionally impaired in auditory delayed memory. Healthy siblings over performed both lifetime diagnosis siblings and controls in the working memory task Offspring analysis: (a) Compared to controls both healthy and lifetime diagnosis offspring were impaired in response inhibition and EL. Healthy offspring performed similar to controls in the working memory task. Asymptomatic: Siblings and offspring showed inhibition deficits but were not impaired in visual immediate memory and EL. The pattern of performance in working memory was similar to the whole sample.

Conclusions: Response inhibition may reflect genetic predisposition to BD, irrespective of phenotype while abnormalities in delayed auditory memory may relate to disease expression, irrespective of specific diagnosis. Enhanced performance in working memory may protect against disease expression.

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S273

Compulsive buying: a review

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Background: Compulsive or pathological buying (or oniomania) is defined as frequent preoccupation with buying or impulses to buy that are experienced as irresistible, intrusive, and/or senseless. The buying behavior causes marked distress, interferes with social functioning, and often results in financial problems. It should be diagnosed as impulse control disorder not otherwise specified (ICD-10 F63.9). Compulsive buying has received increased research attention in the last decade.

Materials and methods: This review summarizes the literature on compulsive buying published during the past 15 years. Two medical libraries (MEDLINE, COCHRANE) were searched in order to investigate the related articles.

Results: Prevalence studies of compulsive buying found a rate between 1 and 6% in the general population. About 90% of those affected are female. Onset occurs in the late teens or early twenties, and the disorder is generally chronic. Psychiatric comorbidity is frequent, particularly mood, anxiety, substance use, eating, impulse control and obsessive-compulsive disorders. In other cases, bipolar disorders express themselves as impulsive behaviours i.e. pathological buying. Treatment has not been well delineated, but individual and group psychodynamic psychotherapy or cognitive-behavioural therapy may be helpful. Serotonin re-uptake inhibitors (SSRI's) may help some patients regulate their buying impulses. Other pharmacological agents have also been used -opioid antagonists, mood stabilizers, and atypical antipsychotics.

Conclusions: Compulsive buying is characterized by repetitive compulsive and excessive misappropriated buying. Labels for this pathological behaviour vary and its classification is uncertain. To date, there is no consistent concept for diagnosis and treatment.

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S274**Handling bad news in medicine: psychological and physiological consequences and questions**

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Background: The frequency of concealment of true diagnosis to cancer patients varies from 20 to 85% [1]. However the direct impact of that specific doctor-patient interaction has not yet been investigated. The present study examined its psychophysiological impact trying to “read” the neurochemical signature that disclosure or concealment of bad news appear to have.

Materials and methods: Sixty seven (N = 67) healthy male medical students were asked to have a brief consultation with a cancer patient and, being given full information about the disease, were randomly assigned in 3 groups. Group A (disclosure group) was instructed to reveal all the information. Group B (concealment group) was instructed not to reveal the truth, while group C was the control group. Mood, cardiovascular reactivity and salivary cortisol were assessed at baseline (T1), 30 minutes later (T2), and immediately after the task (T3). Heart rate was assessed throughout the consultation.

Results: A significant increase in anxiety and negative affect in both experimental groups from T1 to T2 was reported that significantly decreased from T2 to T3 to baseline levels only in the concealment group where there was also a significant decrease of heart rate throughout the consultation (F = 5.304, p = 0.011). The salivary cortisol significantly changed in all three groups throughout the process (F = 5.557, p = 0.007).

Conclusions: A prolonged psychological reaction is involved with disclosure whereas cortisol secretion is only involved with performance anxiety. Further research is needed to ascertain the psychoendocrinological steps taking place and eventually design a strategic plan on training for handling bad news in medical settings.

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S275**Smoking, alcohol and coffee consumption in Greek adolescents**

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Background: The aim of this study, which was carried out between October and May of 2006-2007 was to determine the

prevalence of smoking, alcohol and coffee consumption among the Greek adolescents (age 13-16) in Kassandra, in Greece.

Materials and methods: Of the 370 school students of Kassandra, prefecture Halkidiki, Greece, 315 agreed to answer in an anonymous questionnaire (response rate 85,2%).

Results: 6.5% were smoking at least 5 cigarettes per day (7.1% of the boys and 6% of the girls). All of the smokers were at least 16 years old (15.7% of the students of the lyceum) and they were smoking 18.53 (SD 13.9) cigarettes per day. According the alcohol consumption 27.1% were drinking at least one drink per week (16.7% were in high school and 83.3% in lyceum, p < 0.001). 15% of the students they had to drink at least 4 drinks during entertainment and 6.1% they were drinking alcohol more than 3 days per week. 78.9% of the smokers were also drinking alcohol. Although 1 out of 3 adolescents they were drinking coffee, only 3.1% of them they were drinking 3 or more coffees per day. There weren't any statistical significant differences between the male and the females for any of the above variables.

Conclusions: Although the prevalence of smoking and alcohol consumption is lower than other epidemiological data, is still remaining high, indicating the need of the orientation of the local health system to educate and protect the adolescents of these hurtful conventions.

Acknowledgements

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S276**Faces attract infants' attention in complex displays**

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Background: Hersler and Hochstein [1] found in adult experiments that face “pop-out”, that is they are looked at earlier and for longer, when presented together with a variety of different objects.

Materials and methods: In contrast to “classical” “pop out” studies we don't vary the number of distractors. We explored this effect in 6-month old infants. Twelve slides were presented to infants, each one including one human face and five different object distractors. The objects are similar to faces regarding their shape, colour, luminance and familiarity. Also, half of the faces have direct gaze, the other averted.

Results: Results indicate that faces “pop out” among distractors. Direct and averted gaze do not differ from each other regarding pop-out effects.

Conclusions: The implications of these results are discussed.

Acknowledgements

I wish to thank Prof Mark Johnson, Dr Teodora Gliga, Dr Mayada Elsabbach all of whom helped me in the experiment, and Dr Kyrana Tsapkini, who although far away, has been very supportive to me during this year.

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S277

Standardized low-resolution brain electromagnetic tomography (sLORETA) in the prediction of response to cholinesterase inhibitors in patients with Alzheimer’s disease

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Background: We tried to identify subgroup of patients with Alzheimer’s disease (AD) benefiting from cholinesterase inhibitors (ChEI) treatment using standardized low-resolution brain electromagnetic tomography (sLORETA) [1], which allows to study cortical EEG sources in 6239 cortical grey matter voxels.

Materials and methods: Resting EEG was recorded in 20 mild to moderate AD patients (mean age = 75.04 years; 13 women and 7 men; MMSE 15-24) before and after 6 months and 2 years on ChEI (donepezil, rivastigmine, galantamine) treatment. Based on changes of MMSE scores after 2 years follow-up, 11 patients were classified as Non-responders (decrease of MMSE > 2) and 9 patients as Responders (decrease of MMSE < 2). The localization of the differences in activity between two groups (at baseline) and within groups (baseline vs. 6 months) was assessed by voxel-by-voxel t-tests of the sLORETA images of the log-transformed computed current density power in seven frequency bands.

Results: At baseline, Non-responders had significantly greater current densities in delta and alpha frequency band, which sLORETA localized in frontal (BA 6,8,9,32; alpha) and parieto-occipital (BA 7,17,39,40; delta) areas. After 6 months of ChEI treatment only Responders showed an increase of beta current densities, mainly in left frontal and temporal cortex.

Conclusions: Our results suggest that there is a subgroup of AD patients (probably with more pronounced central cholinergic deficiency syndrome) with better response to ChEI treatment, which can be identified by means of new quantitative EEG technique (sLORETA).

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S278

Effectiveness of cognitive-analytic therapy (CAT) in major depression and systemic lupus erythematosus: a case report

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Background: A significant number of patients with systemic lupus erythematosus (SLE) suffer from depression. Most episodes of depression in SLE seem to be caused by non-organic factors i.e. patients’ responses to the burden of disease and the social consequences of the disease. Therapeutic interventions should consist of a combined pharmacological and non-pharmacological treatment. Cognitive Analytic Psychotherapy (CAT) is a form of brief psychotherapy -its effectiveness has been showed in several studies with patients who manifested various psychological problems. The present study aims to present the appliance of CAT in a patient with SLE and depression.

Materials and methods: A 35-year-old married woman had a 12-years history of SLE. She attended a Community Mental Health Center (CMCH) in Thessaloniki (Greece) manifesting depressed mood, anhedonia, sleep disturbance, and difficulty in the interpersonal relationships. She received a diagnosis of Major Depressive Disorder (according to DSM-IV criteria) and CAT was applied in combination with antidepressant medication (10mg escitalopram/day).

Results: After a 16-sessions course of CAT, the patient showed significantly improvement. Furthermore, for first time during the last decade there was also an improvement in SLE laboratory screening tests i.e. CRP, C, C3, C4, which lead to a reduction of the corticosteroid pharmacotherapy. This improvement was well stabilized for -at least- the next six months.

Conclusions: It is of interest that a brief psychotherapy, i.e. CAT, could be effective both in reducing psychological distress and medical symptoms in SLE.

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S279

Progressive supranuclear palsy (Steele - Richardson - Olszewski syndrome) and dementia

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Background: The progressive supranuclear palsy (PSP) constitutes the second most common parkinsonian disorder after the idiopathic form of the disease with an incidence of 5.3 newly diagnosed cases per 100,000 people annually and prevalence 1.39 per 100,000. Clinically, the disease presents itself with not only motor symptoms but also dementia. The aim of this study is to review and present all recent data, specifically those related to the neuropathology and biochemistry, of dementia in PSP.

Materials and methods: Recent advances in molecular and genetic research of PSP are being reviewed. MRI and PET findings are analytically described, while the utility of other exams, like EEG, in the differential diagnosis between PSP and other dementias evaluated.

Results: As depicted from the previous mentioned imaging methods and research, the reported significant learning deficits in PSP are associated with disease-related lesions located not only at subcortical (globus pallidus, mesencephalon, corpus striatum), but also at cortical regions (prefrontal and premotor cortex). A wide spectrum of symptoms is correlated to the differential development of these lesions from the neurofibrillary tangles within the cortex.

Conclusions: The progression of the condition to dementia is a characteristic element of PSP, but does not occur in the same manner in all patients. The type of the neurofibrillary tangles and the range of the regions that they affect, differentiate this condition from other neurodegenerative disorders. Further research is required in relation to the understanding of the neurotransmitter systems involved in the memory and cognitive impairment of PSP, which will be the cornerstone for the discovery and implementation of novel supportive care regimens.

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S280

The development of a mobile psychiatric unit in a rural area of Greece: preliminary results

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Background: The most radical form of community treatment involves attempts to develop a community-treatment alternative to mental hospital. One interesting and effective community oriented model is the development of services such as Mobile Psychiatric Units in rural areas, which contributes considerably to the establishment of an organized net of psychiatric care that covers the broad needs of the remote areas. This study presents the development of the recently established Mobile Psychiatric Unit of the prefectures of Ioannina and Thesprotia (M.P.U. I-T), Greece, as well as the results of its operation during the first six-month period of its establishment.

Materials and methods: The M.P.U. is a specialized multi-disciplinary team which provides psychiatric services and promotes mental health in the rural areas of the prefectures of Ioannina and Thesprotia, for a population of about 100,000 people. The M.P.U. visits 8 Health Centers of the Primary Health Care once a week, and has the potential to examine patients at home, while a close cooperation with almost all Home Care Programs within the catchment area has been also established. Patients were examined by the MPU staff and medical data were also collected in order to better identify the needs of the patients living in these remote areas.

Results: 344 therapeutic actions have been recorded within this first six months period of the MPU development. 106 (30.8%) were visits at the patients' homes. During this period, the number of the patients was gradually increased, reaching currently a total of 132 patients, whereas 42 patients are permanently followed-up by the MPU. 19 patients had psychotic disorders and 17 had affective disorders. Emphasis is also given in supporting the patients to the management of their practical needs and the attendance of their compliance. Since one of the main goals is the undertaking of activities that promote mental

health and implement educational programs in the community, 58 promotion activities, 55 meetings with members of Primary care services, 9 meetings with members of the local authorities, and 18 meetings with other corporations, such as rehabilitation centers, social support organizations, hospital administrations and the church have been developed within the same period.

Conclusions: It has been mentioned that the basic principles in managing a psychotic patient should be that he gets what he needs, when he needs it and where best possible. Although the present findings are only preliminary, they provide initial evidence about the increased needs of the rural areas for the development of community-based mental health services and that a community-oriented programme based on Mobile Psychiatric Units offers quite satisfactory results in this direction.

S281

Examining parental bonding behaviour in a Greek sample of schizophrenic patients and their siblings

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Background: Bonding between mother and child is described as a complex two-way process ensuring the needs of the child for nurture and protection [1]. Parental bonding is linked with a variety of psychiatric disorders in adulthood. There is clinical evidence to suggest distorted parental bonding in schizophrenic patients in a variety of studies [2].

Materials and methods: The objective of the present study was to investigate the relationship between different types of maternal and paternal bonding in 25 patients with psychotic symptoms and their healthy siblings. Information about maternal and paternal bonding was assessed by the Parental Bonding Instrument (PBI) [3].

Results: The results showed that schizophrenic patients reported significant differences in parental bonding compared to their healthy siblings. In particular, patients described their mothers and fathers to be less caring and more overprotective than their siblings described them. It needs further research to investigate this fact and identify if the patients' perception of the family is distorted, due to the illness, or the family system was different for the two siblings.

Conclusions: Results suggest that patients with schizophrenia, unlike patients with other psychiatric illnesses, reported significantly higher paternal lack of care and overprotection. The importance of paternal behaviour in psychotic illness will be discussed.

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S282

Treatment of bipolar disorder: a systematic review of available data

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Background: The current article is a systematic review of the data available concerning the treatment of bipolar disorder.

Materials and methods: A systematic MEDLINE search concerning treatment guidelines and clinical trials.

Results: The search for treatment guidelines returned 370 articles and was last performed in March 1st, 2007. Thirty-three papers concerning treatment algorithms were traced and 115 trials that considered of importance for the aims of the current review:

Analysis of results: The literature suggests that lithium is useful during all phases of bipolar illness and it has a specific effectiveness on suicide prevention. Both first and second generation antipsychotics are efficacious in the treatment of acute mania. Quetiapine and olanzapine are also effective for treating bipolar depression. Anticonvulsants, particularly valproate and carbamazepine have antimanic properties, whereas lamotrigine may be preferably effective in the treatment of depression but not mania. Antidepressants should always be used in combination with an antimanic agent, because they may induce switching to mania or hypomania, mixed episodes and rapid cycling. The first line of psychosocial intervention in BD is psychoeducation, family-focused psychoeducation, and cognitive-behavioral therapy. Electroconvulsive therapy and transcranial magnetic stimulation are options for refractory patients.

Conclusions: Although a variety of treatment options for bipolar disorder are available today, their effectiveness is far from satisfactory, especially against bipolar depression. Combination techniques might improve the outcome; however there is still lack of data in this field. Research in this field is necessary as well as the development of better guidelines for step-by-step combination treatment.

S283

Successful and steady response to a combination of lamotrigine and quetiapine of an extremely refractory bipolar I patient previously published as a case report: a seven years follow-up of the case report

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Background: We report the seven-year follow up of a 40-years old female bipolar I patient previously published as an extremely refractory depressed patient who had previously

responded only temporarily and only to high doses of clomipramine intra-venous (6 amp daily) plus oral 225 mg venlafaxine, in 2000.

Materials and methods: During the 6 years that followed the patient manifested her first manic episode while for the rest of the time she was continuously depressed and attempted suicide three times. She received ECT without any benefit. She presented to us again after her last attempt. The diagnosis changed to Bipolar I disorder, current episode depressive. She was put on quetiapine 1500 mg, lamotrigine 300 mg and topiramate 50 mg daily. For the next 7 months the patient was normothymic with no residual symptoms.

Results: This was the second true normothymic interval (after the 37 days that followed intra-venous clomipramine) since the onset of her disease at the age of 26.

S284

The involvement of cingulate cortex in Bipolar disorder: a systematic review of existing data

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Background: Bipolar disorder (BD) is a complex and chronic mental disorder and synthesis of different theoretical frameworks and empirical data concerning its etiopathology, is difficult. Most models include among other structures the anterior cingulate cortex (ACC). The current paper is a review of the literature on the involvement of the cingulate cortex (CC) in the development and course of BD.

Materials and methods: The MEDLINE was searched with the combination of the words 'cingulate' with 'bipolar' and 'manic', 'manic depression', 'manic-depression', and 'manic-depressive'.

The search returned 161 articles updated through June 2007. The inspection of the abstracts, and where necessary the assessment of the full paper, selected 83 as relevant and within the scope of the current study. These 84 papers were classified into two broad categories, those that included neuroimaging and those that concerned neuropathological data. Neuroimaging studies were divided into those reporting structural and volumetric changes (N = 24), changes in the resting state activity (N = 7), receptor and neurochemical imaging (N = 5), activity changes after challenge tests (N = 16) and activity changes after therapeutic intervention (N = 7). Neuropathological studies were further subdivided into those reporting volumetric (N = 2) and those reporting histopathological data (N = 26).

Results: The results suggest that there is a state-dependent change in the metabolism of the ACC as well as a reduction of volume concerning both the grey and the white matter. Challenge and activation tests suggest the presence of an abnormal pattern of activation including a reduced or increased activation depending on the state and the condition. Therapeutic intervention seems to reverse some but not all of the deficits observed.

Conclusions: A final synthesis of the findings into an overall model of anatomic and functional disruption is difficult. There is a large methodological variation among studies and many limitations.

S285

Comparison of body fat in patients with schizophrenia and normal controls

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Background: Obesity, especially central, and the metabolic syndrome are highly prevalent in psychiatric patients. They are mostly attributed to the use of antipsychotic medication and to lifestyle habits and constitute a significant health concern since they seem to be risk factors for rather serious medical conditions.

Materials and methods: The study sample included 105 patients suffering from schizophrenia (44 females—41.91% and 61 males—58.09%) aged 36.25±10.03 (range 19-69) and 156 normal control subjects (65 females—41.66% and 91 males— 58.34%) aged 36.03 ±11.33 (range 19-68). Clinical diagnosis was made according to DSM-IV-TR criteria. Height, weight, waist circumference and number of cigarettes smoked daily were recorded. Duration of illness was calculated based on records concerning the age of first onset of psychotic symptoms. Body Surface Area (BSA) and Body Mass Index (BMI) were calculated as well as % body fat, with the use of LifeWise™ Body Fat Analyzers No 63-1525.

Results: The ANOVA results suggested a significant main effect regarding diagnosis and gender as well as for their interaction. Scheffe post hoc test demonstrated significant differences between patients and controls regarding body weight (women only, p = 0.002), waist circumference (men p = 0.002, women p < 0.0001), BMI (women only, p < 0.001), BSA (women only, p < 0.01) and % body fat (women only, p = 0.033), with patients being more obese. The patients also smoked more cigarettes daily (men p = 0.002, women p = 0.016).

Conclusions: The results of the present study corroborate the increased prevalence of obesity in schizophrenic patients, especially female. The interpretation of this finding remains unclear.

S286

Personality disorders: new data vs. old concepts

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Background: The purpose of this paper is to review the most recent literature on personality disorders.

Materials and methods: Recent data suggest that individual personality disorder criteria and full diagnosis may remit within 1-2 years. The same line of evidence disputes the separation of axis I vs. axis II disorders and suggests the presence of a continuum. Neuropsychological, neurobiological and genetic studies favor the presence of cognitive disorders and a non-specific mode of heritability concerning all externalizing

disorders. How to best treat personality disorders remains elusive. The most impressive news in the forensic field concerns the introduction of a new concept, dangerous and severe personality disorder (DSPD) by the UK government, for prevention and treatment purposes.

Results: The most recent data do not adequately support a separate axis II. Future classification may need to move Personality disorders to axis I, each under a suitable group of diseases and eliminate the very term 'personality' from the nomenclature, since it constitutes an empirically unsupported theoretical invasion in a system supposed to be 'atheoretical'.

S287

Risperidone-induced sialorrhea responsive to biperiden treatment

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Background: Sialorrhea or hypersalivation is an uncomfortable adverse effect of antipsychotics. Salivary flow is predominantly under parasympathetic control, whereas the sympathetic system has a minor modifying effect in the saliva composition. However, the mechanism by which atypical antipsychotics cause hypersalivation remains controversial.

We report the case of a patient with risperidone-induced sialorrhea that responded well to I.M. administration of biperiden.

Materials and methods: The patient was an 18 year old female suffering from schizophrenia, paranoid type. She had no history of any medical condition. The onset of her psychiatric condition was at the age of 17. Due to low adherence, she had never taken any medications and had no previous hospitalizations. During her hospitalization, she was started on 1mg/d lorazepam and 2mg/d risperidone (with a gradual increase up to 6mg/d on day 3, due to lack of response and progressive thought disorganization). On day 4 the patient exhibited hypersalivation and a concomitant mild speech disturbance. No signs of EPS were present except for mildly impaired postural reflexes that could be considered as a sign of imminent EPS. Subsequently, risperidone was tapered to 3mg/d along with oral biperiden 2mg/d resulting to full remission of hypersalivation by day 5.

Results: Excessive salivation remains a paradoxical adverse effect of antipsychotic treatment possibly due to the antimuscarinic properties of several antipsychotics. The mechanisms proposed include a postsynaptic α -adrenergic-mediated, by blockade of the α -adrenoreceptors at the level of salivary glands, a cholinergic-specific M4 receptor stimulation and an abnormal deglutition by blockade of receptors in the pharynx or in the muscles involved in the swallowing reflex.

In our case, hypersalivation could be attributed to esophageal dysfunction, as an EPS, however there was no evidence of EPS. Moreover, sialorrhea occurred with risperidone that has no reported affinity for muscarinic receptors. The most likely mechanism seems to be through central α -adrenergic antagonism, since risperidone is a potent antagonist of $\alpha 1$ and $\alpha 2$ -adrenoreceptors. On the other hand, biperiden probably reversed sialorrhea by re-establishing the adrenergic-cholinergic balance through muscarinic receptor blockade.

To our knowledge this is the first case report of a risperidone-induced sialorrhea responsive to biperiden administration. The data about the efficacy of anticholinergics in the treatment of antipsychotic-induced hypersalivation remain controversial suggesting the need for further investigation.

S288

A standardized scoring method for the copy of pentagons test, developed to be suitable for use in psychiatric populations

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Background: Although the 'copy of pentagons' test, versions of which are included in the Bender-Gestalt test and the Mini-Mental test, exists for years, little has been done to standardize it in detail. The aim of the current study was to develop a novel and detailed standardized method of administration and scoring.

Materials and methods: The study sample included 93 normal control subjects (53 females and 40 males) aged 35.87±12.62 and 127 patients suffering from schizophrenia (54 females and 73 males) aged 34.07±9.83. The psychometric assessment included the PANSS the YMRS, and the MADRS.

Results: A scoring method was developed and was based on the frequencies of responses of healthy controls. Chronbach's alpha and test-retest and inter-rater reliability were very good. Two indices and six subscales of the Standardized Copy of Pentagons Test (SCPT) were eventually developed.

Conclusions: The SCPT seems to be a reliable, valid and sensitive to change instrument for the testing of frontal lobe function based on Luria's graphic sequence test. The great advantage of this instrument is the fact that it is paper and pencil, easily administered and little time consuming. Further research is necessary to test its usefulness as a neuropsychological test.

S289

Development of a standardized scoring method for the Graphic Sequence Test suitable for use in psychiatric populations

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Background: Although the graphic version of the Alternating Sequences Test which was introduced by Luria exists for years little has been done to standardize it. The aim of the current study was to develop a novel and detailed standardized method of administration and scoring.

Materials and methods: The study sample included 93 normal control subjects (53 females and 40 males) aged 35.87 ± 12.62 and 127 patients suffering from schizophrenia (54 females and 73 males) aged 34.07 ± 9.83 . The psychometric assessment included the PANSS the YMRS, and the MADRS.

Results: A scoring method was developed and was based on the frequencies of responses of healthy controls. Chronbach's alpha and test-retest and inter-rater reliability were very good. Two indices and six subscales of the Standardized Graphic Sequence Test (SGST) were eventually developed.

Conclusions: The SGST seems to be a reliable, valid and sensitive to change instrument based on Luria's graphic sequence test. The great advantage of this instrument is the fact that it is paper and pencil, easily administered and little time consuming. Further research is necessary to test its usefulness as a neuropsychological test.

S290

Using rodents for modeling Self-Injurious Behaviour

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Background: Self-injurious behaviour (SIB) is referred to any kind of behaviour that can cause harm to body tissues without the intention of attempting suicide, such as cutting, scraping, burning, biting or hitting. It's also a severe problem in retarded and autistic children and some genetically inherited diseases like Lesch-Nyhan syndrome.

Materials and methods: As it's difficult to study abnormal psychological behaviours in humans because of different or unknown backgrounds, it's not uncommon to have animal models to study disorders in a controlled situation. For SIB the most models used are rodents (rats and mice) though there's been reports of SIB in captive rhesus monkeys. Drugs used to induce this behaviour in rodents are pemoline [1], amphetamine, caffeine [2] & clonidine [3].

Results: Studies show that SIB can be induced in rodents by increasing the levels of dopamine, glutamate [4] and opiates and decreasing serotonin in central nervous system.

Conclusions: Though the mechanisms for SIB are still unknown, it's thought that dopamine has the main role in causing it.

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S291

The Aphasia Screening test (A.S.T.): a pilot study, and validation of the test for the Greek Aphasic population

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Background: The present research was a pilot study and validation of an adults' aphasia test for the Greek population. The Aphasia Screening Test for adult's aphasia (A.S.T.) was originally created by Renata Whurr from the existing battery tests and from her exercises. The 1st edition was published in (1974) and its purpose is a fast assessment and rating of adult's aphasia. The 2nd edition was created after a long turn reliability researches by the same author in 1996.

Materials and methods: In this research took part 100 participants (50 aphasic and 50 non - aphasics subjects) recruited from the Greek health setting - region of Attica. The screening test was administered to all aphasic and non - aphasic participants. The sample was taken in random order; it was independent from origin and socio - economic situations. It was aged from 45 till 91 years of age [aphasics (min: 49, max: 91, mean: 68.72, strd.v. 11.52) and non - aphasics (min: 45, max: 85, mean: 60.24, strd.v. 10.62)], for the total of the sample. Also an ENT, psychiatric, neurological and a psychological examination were also requested. All the subjects had no other medical problems that could probably influence the test results.

Results: Statistical analysis of the data revealed that the results obtained are generally consistent with the results reported in other countries. No statistically significant differences were found between the results obtained for the Greek population and the results reported in the USA population in all diagnostic categories and the subtests the test has.

Conclusions: The test appears to be sensitive to adult aphasic symptomatology in the Greek population and presents satisfactory criterion and content validity as the aphasic participants assessed demonstrated clear patterns of deficit. The usefulness of the battery for the Greek population in clinical and research settings is also discussed.

S292

Effect of acute lead intoxication on behavior in adult and young wistar rats

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Background: Lead has been shown to produce cognitive and motor deficits in young rats that could be mediated, In the present study we investigated the effects of lead treatment during the first stage and the aging stage.

Materials and methods: For this purpose, young and adult rats were injected daily for one week with lead acetate at a dose of 15mg/kg body weight.

Results: Administration of lead acetate to young rats for one week caused a reduction in locomotor activity and stereotypic exploratory behavior during a 20 min testing period. This locomotor hypoactivity induced by lead was accompanied by a reduction in stereotypic behaviour compared to adults and control groups These outcomes

Conclusions: The results of the present study suggest that Pb can be a potential risk factor for metabolic accelerator in the cognition impairment and some neurodegenerative disorders.

S293

Effects of NMDA receptor blockade in early developmental period on emotional behaviors in adult social isolated rats reared in physical barren and enriched conditions

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Background: It is known that N-methyl-D-aspartate (NMDA) type of glutamate receptors in the brain play important roles in the development of neuronal migration, dendritic arborization and establishment of synaptic connections. Forasmuch, cognitive and emotional health is dependent of social and physical variety in rearing period.

Materials and methods: The present study is investigate the effects of chronic NMDA receptor blockade in the last maturation period of the brain (between postnatal 10–20 days; 0.25 mg/kg MK-801, twice daily, s.c.) on the anxiety-like behaviors in social isolated (SI) rats that were reared in barren and enriched environments. Anxiety behaviors were evaluated by using an open-field (OF) and elevated plus maze (EPM) test in adulthood.

Results: In the (OF), behaviors of the SI rats reared in enriched environment were characterized by increased upward exploratory behavior ($P < 0.05$) and decreased the number of fecal boli ($P < 0.05$), compared to the SI rats reared in barren environment. Blockade of NMDA receptors in SI barren and enrich reared rats resulted in increased ambulatory locomotion without changing all other OF behaviors, compared to the saline treatment. In the EPM, when reared in enrich environment, SI rats with saline treatment showed decreased anxiety state, expressed as a significant decrease in the time spent in open arms ($P < 0.05$) and an increase in time spent in the close arms ($P < 0.05$) with increases in ethological type of exploratory behaviors (head stretched, $P < 0.05$; upward exploratory behavior, $P < 0.001$; and self-grooming $P < 0.05$), compared to the SI rats reared barren environment. NMDA receptor blockade attenuates the effects of physical enrichment in the EPM.

Conclusions: These findings indicate that NMDA receptor blockade in the last maturation period of brain development is implicated in forming multiple associations with environment.

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S294

Parents of disabled children characterized by intellectual delay and their coping strategies

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Background: The purpose of this research study is to help us to distinguish how much, certain factors can influence 'coping strategies' that parents of disabled children use.

Materials and methods: For carrying on this research, Toulouse's "scale for coping", was used, that relate three areas: Behavioral, Cognitive and Emotional. The chosen method was interviewing disabled children's parents.

Results: Data show that more important problems with the management of sentiments face: mothers, older parents, with less education, girl's parents, parents with older related children with intellectual delay, parents of children with lower indicator of intelligence and smaller self-service rate, and those that when was given birth the child were older than 30's. On the contrary, parameters which are not affect the coping strategies, are: residence, origin place, time moment that parents informed for child's difficulties, subgroup of genetic disease that child were diagnosed with, the existence of other children in the family as well as the follow-up of department of school from the child.

Conclusions: The knowledge of sentimental changes from which the parents go through is a valuable tool which if therapists utilize properly, they can achieve the maximum results, for the level best child's therapeutic confrontation, as the disabled child is a unit of total which mainly constitutes his family. That makes imperative the need for collaboration of parents and therapists because without support and help from the parents, even most distinguished pedagogic and therapeutic programs are frequent minimal useful to special child. (References: Tap et al., 1991; 1993; 1995.)

S295

The effect of Salvia leriifolia root extracts on lipid peroxidation level during global cerebral ischemia-reperfusion injury in rat hippocampus

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Background: The previous pathological data has revealed that Salvia leriifolia root extracts have a neuroprotective activity against cerebral ischemia, thus the effect of the root extracts on lipid peroxidation was evaluated using experimental global ischemic-reperfusion in the rat hippocampus.

Materials and methods: Cerebral ischemia was induced using four-vessel-occlusion (4VO) method for 20 min. The aqueous and ethanolic extracts (0.1, 0.2 and 0.4 g/kg), phenytoin, as positive control, (50 mg/kg) and normal saline (10 ml/kg) were administered intraperitoneally 15 min after the induction of ischemia and the administration was continued every 24 hours for 72 hours after induction of ischemia. The

malondialdehyde (MDA) level was measured by the thiobarbituric acid (TBA) test.

Results: The transient global cerebral ischemia induced a significant increase in MDA level ($p < 0.001$) in comparison with sham-operated animals. The MDA levels were recovered significantly upon phenytoin and the extracts therapy in the hippocampus of ischemic rats.

Conclusions: These results suggest that *S. leriifolia* root extracts may have some protective effects against lipid peroxidation during global cerebral ischemia-reperfusion injury in rat hippocampus.

S296

Evaluation of amnesia induced by intracerebroventricular (i.c.v) administration of lithium in an inhibitory avoidance task in mice

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Background: Lithium is used as a stabilizer in mood disorders such as bipolar depression. Studies show that the drug cause memory deficits in patients treated with the drug.

Materials and methods: In the present study using inhibitory avoidance task (step-down model) time of memory impairment by lithium in male NMRI mice has been investigated.

Results: Immediate post-training administration of different doses of lithium (1, 2 and 4 $\mu\text{g}/\text{mouse}$) impaired memory retention 24h later. Injection of the same doses of lithium 30 min after training showed impairing effect on memory more effectively. With injection of lithium 45 min after training its impairing effect was decreased and only at the dose of 4 $\mu\text{g}/\text{mouse}$, memory impairment was observed.

Conclusions: The results show that post-training administration of lithium dose-and time-dependently impaired memory of inhibitory avoidance. It can be concluded that lithium impairs memory retention and its effect at 30 min after training was maximum response.

S297

Assessment of personality changes in dementia of the Alzheimer's type and frontotemporal dementia

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Background: Personality changes occur in the course of many dementive illnesses, in addition to disturbances of cognitive processes. In the literature, however, there is no model that would explain the nature, direction, and dynamics of these changes. Cognitive deterioration in these patients is accompanied by loss of insight regarding personality changes. This is the reason why the majority of methods available on the market

to study personality, though highly accurate and reliable, are not suitable for the evaluation of these changes. The purpose of this research was to describe the nature, direction, and dynamics of personality changes in persons with a clinical diagnosis of dementia of the Alzheimer type (DAT) and fronto-temporal dementia (FTD).

Materials and methods: Case histories. Patient BM (62 years old) has been clinically diagnosed with DAT, and patient CM (49 years old) with FTD. Both men fulfill the respective ICD-10 criteria, and have neuropsychological profiles of cognitive function disorders, supported by computerized tomography (CT) or magnetic resonance imaging (MRI).

Methods. Neuropsychological screening tests were used to measure overall mental functioning, attention, memory, visuospatial functions, speech and language, executive functions and personality. A set of questions from the International Personality Inventory Pool (IPIP) in the authorized Polish version (IPIP-QPv) was used to assess personality; the questionnaires were filled out by the patient himself and by the primary caregiver. The studies were performed twice at four-month intervals.

Results: The results given by the caregivers and the patients are more consistent in the first examination, while in the second there appeared major discrepancies, reflecting the loss of insight by the patient. The results obtained on the IPIP-QPv from the caregiver indicate that in the case of patient BM, cognitive deterioration is accompanied by a decrease in the dimension of Extraversion, while in the case of patient CM the situation is reversed.

Conclusions: Personality changes were observed in both patients described here. These changes depend on the pathomechanism and localization of the changes in brain tissue, and on the patient's premorbid personality. The IPIP-QPv is a suitable instrument for the evaluation of the nature, direction, and dynamics of personality changes in the estimation of the caregivers, and for assessing the level of insight regarding these changes in the patients themselves.

S298

Type A behavior pattern, stress and coronary heart disease: observational study

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Background: Many studies have provided clear and convincing evidence that psychosocial factors contribute to the causation of coronary heart disease (CHD). Studies indicate that there is positive relationship between stress, type A personality and coronary heart disease. In the present study the relationship between personality factors, depression, anxiety, stress and coronary heart disease was evaluated. The aim of this study was to validate personality traits and psychosocial risk factors associated with coronary heart disease.

Materials and methods: All subjects were divided into two groups: the group of patients with CHD (40 participants / 20 males and 20 females), and the control group of 40 (20 males and 20 females) healthy participants. All Participants undergone through general health questionnaire, personal views survey scale, life event, social supports, emotional support and psychosocial work.

Results: Coronary heart patients and the normal group were significantly different in personality type. Patients with coronary heart disease had higher score on type A behavior. Regarding anxiety, depression and stress there were significant differences between patients and the normal group. Patients with coronary heart disease experienced more stress, anxiety and depression than the normal group, but the normal group's were emotionally strong and their temperament was high.

Conclusions: The study of the relationship between stress, type 2 behavior pattern showed that there is positive significant relationship between type 2 behavior and coronary heart disease.

S299

A new method for studying developmental factors in cognitive and emotional behaviors in adult mice

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Background: It is recognized that mental-emotional diseases can be caused by disturbances of cognitive processes of matching between the current and stored spatial information [1]. Cognitive matching processor is activated in rodents also during a stereotype upward behavior (rears) [2]. In the present study, we used a new method for studying the effects behavioral dissection of rears in developmental period (BDRD) on cognitive and emotional responses of adult mice.

Materials and methods: This new method consists of that following the postnatal 21 days, male BABL/c mice were limited performing vertical pose for 8 weeks by housing in a transparent plastic cage with adjustable height. These animals could perform horizontal movements and contact each others with free access to water and food. In adult age, these animals were tested in the open field, elevated plus maze apparatus and short-term fear memory retrieval to the partial or whole contextual cues in the passive avoidance and Pavlovian fear conditioning apparatus were also evaluated.

Results: BDRD mice did not show any alteration in the open field behaviors compared to control mice. In elevated plus maze, BDRD mice showed significant deficits in ethological types of exploratory behaviors ($P < 0.01$) with an increase in the time spent in closed arms ($P < 0.05$). These animals had deficit in fear retrieval to the partial contextual cues of the passive avoidance apparatus ($P < 0.001$) but not to the whole contextual cues in the Pavlovian fear test.

Conclusions: BDRD method can be used for investigation relationship between the activity of cognitive matching processor during developmental period and causes of cognitive and emotional disorders in adult age.

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S300

Assertiveness training as a major component element of a psychoeducational program addressed to psychiatric patients and their families

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Background: J. Wolpe defined assertive behavior as the appropriate expression of any emotion excluding anxiety toward subject to better express his opinions toward others, to recognize and to accept the opinions of other people and to express his feelings without aggressivity. As a result, the adoption of this type of behavior becomes apparent by means of procedures focusing on the acquisition of social dexterity. In conclusion, these techniques aim not only at allowing the person to feel assertive about his opinions vis-à-vis his interlocutor, but also to express his feelings without aggression. A psychoeducational intervention improves the understanding of mental illness, increases the patient's coping ability and supports cooperation between patients and mental health professionals. In the provision of a psychoeducational approach an assertiveness training program can be developed to suit the needs, the expectations and the capabilities of patients, significant others, care team members and the mental health organisation in general.

Materials and methods: The overall process involves learning about the different components of behavior in its different aspects, e.g. the motive or vocal level and interpretation of roles aiming at the adoption of the desired behavior. The content of verbal responses is also taken into consideration.

Results: The assertiveness techniques may be proposed for individual or group therapy for small groups under the direction of one or more therapists.

Conclusions: That assertive training applied on a group of psychiatric patients appear affective within a reasonable time-frame, independent of the motive for treatment, the coexisting psychopathology and the dominant or latent manner in which the lack of assertiveness is expressed.

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S301

Online and offline infidelity: impact on life

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Background: In today's technological development, internet and electronics has fueled the online and offline infidelity. This study has experiences of 700 participant's who shared there life experiences and attitude. Infidelity research analysis was done and sexual, emotional components were studied. Emotional infidelity consists of involving with someone other than partner that may be in the form of feeling, thought or in the form of physical exploration in internet chatting. Sexual infidelity is perceived as an act of betrayal that is as fruitful and satisfactory as in real life.

Materials and methods: Analysis of report is used to outline the scenario of online and offline infidelity.

Results: In today's context increased use of computers and cellphones has negatively effected the marital relationship. Infidelity online has risk of seperation, divorce, marital conflict and behavior problems in children. Cybercafe addiction may also present with depression, gambling and substance abuse.

Conclusions: Keeping in mind the above thoughts psychotherapist dealing with family problems need to be well oriented to handle the situation associated with online and offline infidelity.

S302

Predictors of positive CT scans in the elderly trauma patients with minor head injury. Case reports and review of the literature

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Background: The purpose of this study was to determine whether there were characteristics of the trauma patient with a minor head injury. Glasgow Coma Scale (GCS) of 13–15, that would predict a positive cerebral CT scan.

Materials and methods: An analysis of 300 patients with potential head injuries transported to our department was performed. The following characteristics were analyzed as possible predictors: 1. scene GCS, 2. emergency room GCS, 3. a change in GCS from scene to emergency room, 4. loss of consciousness, 5. focal neurological deficit.

Results: 50 per cent (150/300) of the patients underwent CT scanning of the head. CT scans were positive in 5.3 per cent (16/300) of the total group and 10.6 per cent (16/150) of those who underwent CT scanning. In the patients without LOC and ER-GCS of 13-15, all CT scans were negative.

Conclusions: Of all the patients with positive CT scans, 4 underwent emergent craniotomy: 2 for a depressed skull fracture with underlying contusion, and 2 for a temporal bone fracture and an epidural hematoma. Both patients had LOC and SC-GCS and ER-GCS of 15. We present our cases and finally we performed a review of the literature.

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S303

Mild head injuries: prospective study

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Background: To define the incidence of positive CT scans in patients with different grades of mild head injury (MHI), 2. To identify clinical predictors of positive CT scans, 3. To evaluate the usefulness of plain radiographs in the triage of patients with MHI, 4. To evaluate frequency and nature of surgical intervention in MHI, 5. To evaluate the risk of deterioration in MHI, and 6. To find out whether patients with normal neurological examination and normal CT can be safely discharged.

Materials and methods: In a prospective study conducted over a period 1 year in our Department, all patients with mild head injury (defined as Glasgow Coma Scores (GCS) 13–15) were admitted to the head injury unit. Patients underwent standard clinical examination, skull radiography and cranial CT. No clinical criteria were used to select patients for CT scanning and all the patients were subjected to CT. Patients with negative findings on CT and a normal neurological examination were discharged after 24 hours of observation. Patients with positive findings on cranial CT were treated either medically or surgically as deemed necessary. Outcome measures included safe discharge, clinical deterioration, need for surgical intervention or death. The following factors were analyzed statistically to find out whether they can be used as predictive factors for positive cranial CT. They were: age, sex, mode of injury, loss of consciousness, post-traumatic seizures, ear/ nose/throat

bleeding, vomiting, admission GCS score, scalp injury, polytrauma, focal neurological deficit, fractures visualized on skull radiography.

Results: 300 patients were included in the study. Of these males constituted 60%, 40% females. Age, mode of injury, loss of consciousness, post-traumatic seizures, ENT bleeding, vomiting, scalp injury and polytrauma were not found to be predictors of positive CT. Admission GCS score, focal neurological deficits, and fractures detected by skull radiography were found to be statistically significant predictors of positive findings on CT.

Conclusions: Patients with multiple lesions on CT had a higher chance of deterioration than those with single lesions. The duration of hospital stay was prolonged in patients with positive CT. As no patient with a normal neurological examination and a normal CT deteriorated, we believe these patients can be safely discharged without need for admission and observation.

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S304

The ventral hippocampus is involved in morphine-induced anxiolytic behavior

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Background: Several studies show that the elevated plus maze (EPM) is one of the models for the selective identification of anxiolytic and anxiogenic drug effects in rodents. Furthermore, morphine and other opiates are known to exert anxiolytic effects probably by interacting many systems one of which could be the serotonergic system. The ventral hippocampus exhibits high densities of μ -opioid receptors and is one of the important brain sites involved in modulation of fear and anxiety.

Materials and methods: In the present study, the effects of bilateral injections of the morphine into the ventral hippocampus (intra-VH) on the EPM test of anxiety were examined in male Wistar rats. In these experiments, animals weighting 220–280 g at the time of surgery were used. Eight animals were used in each group of experiments. Animals were bilaterally cannulated in the VH by stereotaxic instrument, and were

allowed to recover 1-week before behavioral testing. All procedures were carried out in accordance with institutional guidelines for animal care and use.

Results: Bilateral intra-VH injections of the different doses of morphine (2.5, 5 and 7.5 μ g/rat) increased the percentage of open arm time (%OAT) and open arm entries (%OAE). Thus it appears that morphine produces a significant anxiolytic effect without the significant changes in the locomotor activity. One possible explanation for this effect of morphine could be that it blocks the 5HT release induced by the EPM exposure and so demonstrates an anxiolytic effect.

Conclusions: In conclusion, the VH may be involved in morphine-induced anxiolytic behavior.

Acknowledgements

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S305

The use of amisulpride in alcoholic outpatients

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Background: The goal of this study was to evaluate the effectiveness of amisulpride (Solian) in chronic alcoholic patients and the registration of decrement of tendency to drink alcohol.

Materials and methods: 33 patients (28 males and 5 females) who voluntarily came to the outpatient psychiatric department of our hospital with the request to break off abuse of alcohol were studied. Amisulpride was given at dose 800 mg to all patients as the only treatment with gradual increase to 1200 mg. Our study involved patients with abuse of alcohol for longer than 2 years, aged 20-60 years. Patients with serious somatic problems (diabetes mellitus, chronic renal failure, liver disorder) were exempted. The effectiveness was evaluated after 1, 6 and 12 months of treatment.

Results: Treatment with amisulpride at dose 800 mg 24h reduces significant the tendency of alcohol drinking in most of patients and that became more obvious 3 months later. The dose increased to 1200 mg for 8 patients because the results after 3 months of treatment were not significant. After 12 months of treatment, 29 patients cut off the abuse of alcohol and only 4 patients quit the treatment.

Conclusions: Administration of amisulpride at dose 800-1200 mg to chronic alcoholic patients for 12 months causes gradual reduction of tendency to alcohol drinking.

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S306

Influence of morphine-induced sensitization on histamine-induced anxiety like behaviors in the elevated plus-maze test

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Background: It has been suggested that histamine have modulatory influence on anxiety-related behaviors both in animals and humans. On the other hand, ventral hippocampus (VHC) may be an important brain site in the modulation of fear or anxiety. In the present study, the effects of bilateral intra-VHC injections of histamine on anxiety-related behavior have been investigated in morphine-sensitized and naive rats using a plus-maze model.

Materials and methods: Rats, weighing 200–250 gr at the time of surgery, were bilaterally cannulated in the VHC by a stereotaxic instrument, and were allowed to recover 5 days before sensitization. Sensitization was obtained by subcutaneous injections of morphine (7.5 mg/kg) once daily for 3 consecutive days and then 5 days free of the opioid before test. On the test day, eight rats in each group received bilateral intra-VHC injection of histamine at doses 2.5, 5 and 7.5 µg/rat five minutes before undergoing an elevated plus-maze test.

Results: A two-way analysis of variances (ANOVA) test between the response of bilateral intra-VHC injection of histamine (2.5, 5 and 7.5 µg/rat) in naive and morphine-sensitized rats using post hoc analysis showed that morphine sensitization increased %OAT (Open Arm Times) and %OAE (Open Arm Entries) indicating an anxiolytic response by morphine sensitization in the presence of histamine.

Conclusions: Our results indicated that while histamine in naive rats induces anxiogenic response, this behavior was attenuated in morphine sensitized rats.

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S307

Ziprasidone among adolescents with overlapping OCD and Tourette's syndrome (Pilot study)

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Background: OCD with an onset in childhood or early adolescents is usually presented as a specific subtype, with more boys affected and frequently co-morbid with tics and Tourette's syndrome [1]. Our observation in clinical practice indicates that during the pharmacotherapy the OCD and Tourette's syndromes shift continuously. As a result for successful treatment medication should be changed from SSRIs to antipsychotic with dopaminolytic properties or a combination of both is needed.

Materials and methods: In open studies we conducted an 8-week trial of 14 adolescents (12–15 year old, 9 male and 5 female) with co-morbid OCD and Tourette's syndrome. All patients had been pretreated for several years with a number of psychotropic medications including haloperidole, sulpiride, sertraline, fluvoxamine and clomipramine. Before starting the study all patients passed a 2-week drug washout period. All patients were diagnosed according to DSM-4 criteria of OCD and ICD -10 criteria of tic disorders. Also patients held CY-BOCS and Zung tests for depression and CGI-TS-S. Dosage range of Geodon was from 20 to 80–140 mg/day depending on the effectiveness.

Results: Despite the fact that the treatment began with 20 mg of ziprasidone, no patient showed improvement, and even 40 mg of Geodon did not help. In 6 patients we observed improvement of OCD syndrome (CY-BOCS scores 28% mean decrease from baseline) with a dosage between 60–80 mg (60 + 20 mg capsule in bed time). Among 9 adolescents we observed much improvement of both symptoms after 4 week treatment with a dosage from 80 to 120–140 mg. (CGI -TS Severity baseline 4,5 +– 0,6 endpoint 2,6 +– 1,2)

Conclusions: Taking into consideration the fact that co-morbid OCD and Tourette's syndrome are treated successfully by medications with different mechanisms of neuronal action, the studies of atypical antipsychotics with both dopamine and serotonin properties are promising. Consequently, the atypical antipsychotic with dopamine and serotonin properties possibly can be the most useful medication. However, a new control study with a larger target group is needed.

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S308

Morphological relation of the lingual sulcus to the Posterior parahippocampal region in the human brain

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Background: The ventromedial temporo-occipital region of the human brain includes the caudal part of the parahippocampal gyrus that plays a critical role in memory formation [1] and the immediately adjoining ventral occipital region subserving secondary visual processing [2]. The morphology of this region in the human brain is not well understood, although it is crucial for interpreting the precise location of cortical activation peaks resulting from functional neuroimaging studies of memory and visual processing. The present research examined the morphological patterns of the lingual sulcus (LiS) and its relation to the caudal parahippocampal region that includes the Posterior extension of the collateral sulcus (CSp) and the isthmus, the narrow passage that links the parahippocampal gyrus to the Posterior cingulate gyrus [3].

Materials and methods: We studied high resolution T1-weighted magnetic resonance images of 40 healthy volunteers. We employed 3D-imaging software for an in-depth inspection of the sulci within all three planes. All sulci were identified by marking and color-coding the space between their banks. Images were registered into the Montreal Neurological Institute standardized stereotaxic space [4] which is based on the Talairach space and is internationally used in functional neuroimaging studies.

Results: The LiS was consistently identified as an independent sulcus running underneath and more or less parallel to the calcarine sulcus. It was found to blend in many cases with the adjacent medial branch of the CSp. The CSp defines the Posterior part of the parahippocampal region and originates around the mid-level of the hippocampus and bifurcates around the level of the isthmus. The anterior part of the LiS originates just Posterior to the isthmus and runs caudally towards the occipital pole without ever reaching it.

Conclusions: These findings provided a definition of the morphological limits of the Posterior parahippocampal region that is now thought to constitute a functional unit for memory processing and distinguished this region from the lingual gyrus

bounded by the LiS that forms the ventral part of the parastriate visual areas. These results provide the possibility of a clear and unambiguous localization of activation peaks obtained in functional neuroimaging studies and thus may unravel the anatomo-functional organization of the caudal temporo-occipital region.

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S309

Unexpected stressful experiences in transition from medical student to junior doctor in Ardabil medical sciences university centers and affiliated hospitals 2005

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Background: The transition from medical student to junior doctor is difficult for many reasons. These include the content of the undergraduate curriculum (which often covers numerous subjects which have little or no application to clinical practice), the lack of an apprenticeship period with close supervision, and the extraordinary nature of the first year junior doctor's job in terms of clinical responsibilities, horrendous workload, and resulting personal and professional unexpected stress.

Materials and methods: This survey was a descriptive study in which, stressful experiences of new graduate junior doctor during transition period has been assessed. The sample consisted of 150 new graduates working in teaching centers and affiliated hospitals of Ardabil Medical Sciences University which during research conduction placed at the end of first six month of work. The data were collected using a questionnaire in 5 parts: the first part is related to demographic characteristics and other parts were including individual, managerial, supportive and treatment stressful experiences. Data analyzed using descriptive and analytic statistic with spss software.

Results: The finding of this study indicated that many of new graduates had high level of individual and treatment stressful experiences. Most of junior doctors believed that they had not

enough knowledge for treating their patients, they were not able to diagnose and distinguish the problem of their patients and also they believed that most of the people did not trust them, not the implementation of orientation programs at the beginning of job and individual stressful experiences were other problems.

Conclusions: It is important that medical universities plan some programs for medical students of final year to recognize the difficulties that they are likely to face as junior doctors and the ways in which they might overcome them.

S310

Phonemic and grapheme perception in dyslexia and (Central) Auditory Processing Disorder

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Background: The present study endeavored to investigate the extent of co-existence of auditory processing disorder (APD) and dyslexia.

Studies such as Cestnick et al. [1] found that APD contributes to poor non-word reading. Also, strong relation between APD and dyslexia was found by King et al. [2].

Materials and methods: Seventy-five children between 7.9–17.4 years of age participated in this study. All of them received a battery of auditory processing tasks along with a standardized test measuring the grapheme (visual) and phoneme (auditory) discrimination of non-words.

The children were divided into four categories: a) 25 children without APD and dyslexia (0-0) that were used as a control group, b) 21 children with APD and negative for dyslexia (1-0), c) 15 children negative for APD but positive for dyslexia (0-1) and d) 12 children positive for APD and dyslexia (1-1).

Results: The positive APD and dyslexia group had significant lower results (standard scores) than the group without APD and dyslexia in both tasks (grapheme discrimination task, auditory discrimination task) for children aged 8 and 9 years old. On the other hand, for older children, aged 10 years old and up, the results did not have important differences in both groups (control and positive APD and dyslexia).

The difference between younger and older children could possibly be attributed to a ceiling effect displayed by the fact that children aged 10 and up found the task easier regardless of the group we categorized them in.

Conclusions: Perception of phonemes (through the auditory channel) and graphemes (through the visual channel) was significantly poorer in children 8 and 9 years old with co-existing Dyslexia and (Central) Auditory Processing Disorder.

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S311

The role of vitamin B12 at chronic antiepileptic drug treatment

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Background: A more systematic study of correlation of vitamin B12 levels and mental health. During the patient's stay in our clinic ward she mentioned hemodialysis, unstable walking, and a not elucidatory determinative weakness at both hands. After full neurological examination, we moved to the examination of B12 levels. As these levels were 150 pg/mL we started substitute treatment, provided that the patient had been taking antiepileptic medicine for years and had low toxicity of B12. At following neurological examinations the clinical icon of the patient had obviously improved. Carbamazepine and sodium valproate are widely used as maintenance treatment of bipolar disorder. Although the alteration of accumulation of B12 in serum is not totally acceptable by scientists [1, 2, 3], there are indications for the relation between antiepileptic medicine and reduced levels of B12 at least at cerebrospinal fluid folate [4]. Additionally, the combination of any inefficiency with the chronic alcoholism that is often present in this category of mental patients and the rise of life expectancy creates the need of a bigger demanded quantity of B12 in their diet.

Materials and methods: A female patient, with bipolar disorder II. Psychiatric and physical examination, laboratory tests, scientific review.

Results: It has been over 20 years when an incident of a maniac patient without megaloblastic anemia has been reported for the first time [5]. The role of B12 at nervous system function is widely known, either it concerns the spinal marrow disorders (dorsal and side pharynx) or the anorexia as pathogenic factor. It is obvious that the B12 can improve the neurologic symptoms of patients who receive chronic antiepileptic drug treatment, even though they do not have anemia [6].

Conclusions: It is worth taking into account if the test of B12 levels can or must be introduced in routine laboratory tests.

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S312

Repetitive Transcranial Magnetic Stimulation (rTMS) for the treatment of depression in schizophrenia patients

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Background: TMS is a safe stimulation technique of the brain with antidepressive activity, but there are limited data in clinical psychiatry on application of rTMS in schizophrenia. Depression is an important co-occurring syndrome in schizophrenia and is associated with increased morbidity and mortality. The aim of our study was to estimate the effect of rTMS for depression in schizophrenia.

Materials and methods: 32 patients with schizophrenia (ICD-10) without exacerbation of psychotic symptoms and with marked depression (CDSS score > 6). All patients were on stable medication for at least 4 weeks before and throughout the rTMS treatment. 15 Hz rTMS at 100% of MT was administered over the left dorsolateral prefrontal cortex. The Neuro-MS stimulator (Ivanovo, Russia) with figure-eight coil was used for 5–20 sessions within a three-week period. Each session consisted of 20 6-second trains with 1 minute intervals (1800 stimuli per session). Patients were assessed weekly by CDSS, HAMD, CGI, PANSS and battery of cognitive tests.

Results: The number of responders (50% reduction of CDSS score) at the end of rTMS treatment were 20 (62,5%). The clinical effect of rTMS appeared at the end of the first week. Negative symptoms of PANSS also were decreased during rTMS treatment (29,8% reduction after 3 weeks) without significant changes in positive symptoms. Cognitive tests showed improvement in executive functions and attention switching but there weren't any significant changes in verbal and visual memory.

Conclusions: Our preliminary data confirm that rTMS is effective in the treatment of depression in patients with schizophrenia.

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S313

Experimental models of insomnia and alcoholism: cognitive abilities and oxidative stress levels

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Background: Clinical studies demonstrate that insomnia and alcoholism are significantly associated [1]. We have previously

shown that experimental insomnia causes oxidative stress in rats [2]. Ethanol is known to induce xanthine oxidase (XO) activity leading to excessive free radicals generation. High free radical levels are associated to cognitive decline [3]. We investigated the effects of the simultaneous application of experimental alcoholism and insomnia on the oxidative status and cognitive functions of male rats.

Materials and methods: Wistar rats were divided into four groups: I-control; II-Alcohol (10% ethanol, ad libitum for six weeks); III- Insomnia (constant light for six weeks); IV- Alcohol+ Insomnia.

After sacrifice malondialdehyde (MDA) levels and endogenous XO activity were evaluated in blood plasma. Cognitive functions were assessed in active avoidance “shuttle box”.

Results: Shuttle-box: cognitive abilities of rats in all experimental groups were significantly decreased compared to the same day controls; the “alcohol+insomnia” group showed shorter latency time than the “alcohol” group and longer time than the “insomnia” group; “insomnia” rats demonstrated increased number of escapes compared to the same day “alcohol” rats.

Blood plasma MDA levels decreased in the order: (Insomnia +Alcohol) > (Alcohol) > (Insomnia) > (Control). Relative differences in the XO activity were observed.

Conclusions: Relative differences in the XO activities suggested that the oxidative damage is not a result of XO-generated superoxide radicals only. Cognitive decline was correlative to blood plasma XO activity in all stress models. The correlation between cognitive deficits and oxidative stress markers indicated different adaptive abilities of the animals to the investigated stress models.

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S314

Assessment of high-risk eating behaviours among an adolescent female sample: prevalence and cultural aspect of the body shape

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Background: Eating disorders are frequent among women and usually begin during adolescence. Many studies have shown the tight link between these disorders and body shape concerns, particularly the current aesthetic body shape model concern. The aim of this study is to determine high-risk eating behaviour frequency among a sample of adolescent females. It also aims at pooling their opinions concerning the ideal image of woman's body.

Materials and methods: This study has been held in the city of Sousse, in Tunisia. The sample included 614 representative girls of all adolescent females attending secondary schools in Sousse.

The high-risk eating behaviours were assessed by administering the 40 items version of the Eating Attitude Test (EAT40) translated in Arabic. Participants completed too, a self-administered questionnaire consisting of socio-demographic items and questions about their opinions concerning the ideal image of woman's body.

Results: Adolescents were 12 to 20 years old, with a mean age of 15.8. 28.5% (n = 177) of the sample have scored more than 32 in the EAT40 and were considered as being at high-risk for eating disorders. 82.5% (n = 507) of the sample desired a moderate body size and 59% (n = 362) preferred a body shape without curves. Thinness was significantly more desired by the high risk group of eating disorders (P < 0,01). Concerning the sample opinion about the society image of woman's body shape, 22,7% think that society encourages thinness and 40,7% think that it discourages the curvy body. Finally, the high-risk adolescents think, more than the others, that society encourages thinness (P = 0,048).

Conclusions: These findings suggest that the prevalence of abnormal eating attitudes is as common among Tunisian schoolgirls as occidental adolescents. The high prevalence found in our study may be related to the cultural transition witnessed by Tunisian society this last decade. In fact, in our study adolescent females seem to be attracted by an occidental woman's body image, particularly adolescents with high risk for eating disorders. These findings reinforce the notion that eating disorders are culture-reactive rather than culture-bound phenomena and provide insight into the extent of eating-related problems and body image issues in developing societies.

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S315

The comparison between therapeutic effects of different classes of antidepressant drugs in treatment of genetical and reactional depression
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Background: Depression as a common psychiatric disorder can occur in two types: endogenous or genetic and exogenous

or reactional. These two types of depression, from the point of view of response speed to treatment and type of appropriate drug for treatment are different. This study has been executed to compare therapeutic effects of different classes of antidepressant drugs in treatment of genetic and reactional depression.

Materials and methods: Present survey is a clinical-trial study, a completely randomly block type, that has performed on 30 patients (male and female). Selection of study sample accomplished randomly among unipolar depressed patients that has referred to Ardabil's psychiatry clinic diagnosed based on DSM-IV criteria. Researcher - Made questionnaire, Beck, and Catelle depression test were used to collect data. To analyze data, for completely randomly blocked designs, two-factor variance analysis method and F test were used.

Results: This study showed that genetical depression does not response treatment rapidly and its response type is not good and persistent. From the point of view of time, reactional depression has a delaying response but its response type is good and persistent. In addition, no difference was observed in efficacy of different classes of drugs for treatment of these two types of depression. The results of this research showed that there is no difference between treatment response of two types of depression (genetical and reactional).

Conclusions: There is no preference in efficacy of different classes of drugs in treatment of these two types of depression.

S316

Treatment of bipolar disorder: a complex treatment for a multi-facet disorder

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Manic-depression or bipolar disorder is a multi-facet illness with an inevitably complex treatment. The current article summarizes the current status of our knowledge and practice in its treatment. It is widely accepted that lithium is moderately useful during all phases of bipolar illness and it might possess a specific effectiveness on suicidal prevention. Both first and second generation antipsychotics are widely used and the FDA has approved olanzapine, risperidone, quetiapine, ziprasidone and aripiprazole for the treatment of acute mania. They could also be useful in the treatment of bipolar depression however only limited data exist so far to support the use of quetiapine monotherapy or the olanzapine-fluoxetine combination. Some but not all anticonvulsants possess a broad spectrum of effectiveness, including mixed dysphoric and rapid-cycling forms. Lamotrigine may be effective in the treatment of depression but not mania. Antidepressant use is controversial. Guidelines suggest their cautious use in combination with an

antimanic agent, because they are supposed to induce switching to mania or hypomania, mixed episodes and rapid cycling. The first-line psychosocial intervention in BD is psychoeducation, followed by cognitive-behavioral therapy. Other treatment options include Electroconvulsive therapy and transcranial magnetic stimulation. There is a gap between evidence base, which comes mostly from monotherapy trials, and clinical practice, where complex treatment regimens are the rule.

S317

Arguments against the cognitive dysmetria hypothesis of schizophrenia

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Recently, the "cognitive dysmetria" theory for schizophrenia has been formulated. According to this theory, a primary neuro-cognitive dysfunction is the core of schizophrenia and is responsible for symptom formation. The suggested perceptual fragmentation of external stimuli and the inability to connect such perceptions with internal schemata is suggested to lead to positive symptoms, while defensive self-restriction and the exhaustion of the mental apparatus leads to negative symptomatology. Objections to this theory include observations (i) that patients with dominant positive symptoms (e.g. delusions, hallucinations) manifest better neurocognitive function, and (ii) that typical antipsychotics significantly reduce positive symptoms and thus improve both the clinical picture and the functioning (to the extent it is reduced because of positive symptoms) of the patients, yet have little or no effect on negative (e.g. loss of volition, emotional blunting) and neurocognitive (e.g. attentional and memory deficit) symptomatology. The literature suggests that neurocognitive symptoms group independently from the rest symptomatology. It is suggested that there is currently more evidence against than in favor of the "cognitive dysmetria" theory.

S318

Correlation between shift work and psychological problems among hospitals personnel of Ardabil University of Medical science

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Background: Working in the form of shift works especially with irregular circulation derange the circadian rhythms of human body, that this derangement has a close relation with aggravation of depression's sign and other psychological problems. So shift work can be propounded as a risk factor of psychological problems creation. This study has been executed to determine relation between shift work and psychological problems among hospital's personnel of Ardabil University of Medical science.

Materials and methods: This study is a retrospective case-control one and has been executed on 388 persons of personnel

of hospitals of Ardabil University of Medical Science (223 as case group and 65 as control group), that has been selected randomly. Requisite information was collected with three questionnaires. Including General Health Questionnaire (GHQ), personal questionnaire and standardized sleep state evaluation questionnaire and were analyzed by SPSS statistical software. Chi-square and analysis of variance tests were used to test investigation's hypothesis.

Results: In evaluation of general relation between shift work and prevalence of psychological problems no meaningful relation was found, but with renewed encoding and psychological problems determining, meaningful relation were found between these problems such as somatoform signs ($p < 0.005$) anxiety ($p < 0.019$) social action disorder ($p < 0.001$) and depression ($p < 0.019$) and shift work. At the same time result of comparison of sleep state in the case and control group showed that in all items sleep taking nap throughout day, there is meaningful difference between two case and control group and this difference show that more sleep problems is found in case group as compared with control group. Also, meaningful relations were seen between record of service and prevalence of mentioned problems ($p < 0.001$). According to obtained results in this survey and meaningful relation between prevalence of psychological problems and shift work, in hospitals that has been studied.

Conclusions: It is advised to reform irregular circulation of shift Work in hospitals and with due attention to work conditions of any hospital, a sought after shift work system be executed.

S319

Assessing general health among stroke patients through a comparative methodology

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Annals of General Psychiatry 2008, 7(Suppl 1):S319

Background: The aim of present study was to compare general health status and its domains like mood domain between stroke patients and other causes of hospitalization.

Materials and methods: In a hospital based case-control study a total of 150 stroke cases along with 150 controls were enrolled. Study participants were selected from those patients hospitalized in Alavi, Bouali and Fatemi university hospitals located in Ardabil, north-west of Iran. Participants were interviewed and a questionnaire containing demographic information, known stroke risk factors and GHQ 28 questions was filled out for them. Data were analyzed by SPSS version 13 statistical package.

Results: Demographic characteristics in case and control groups were not statistically different. Mean total GHQ score was 13.02^{4.8} (Mean^{SD}). It was 13.85 in case group and 12.36 in control group. However those having a high GHQ score hadn't different distribution between two groups.

Conclusions: It maybe concluded that although stroke affects general health status and increases chance of depression but this may not be more than the effect of some other diseases or hospitalization itself.

S320**Assessment of suicide risk factors among attempted suicide in Ardabil**

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Background: Suicide is defined as finishing life deliberately upon conditions that done by individual's own desire and own hand. Suicide is a major problem in social health and its rate is now increasing among individuals at 15–24 age range. This study has performed to detect risk factors and major fundamental agent been used in suicide.

Materials and methods: This is a descriptive cross-sectional study. Statistical unit in this study obtained from individuals that committed suicide and hospitalized in fatemi and Buali hospitals of Ardabil. Sample quantity was 218 cases that have been from both sexes and all ages. Clinical interviews have derived from patients and their first-degree relatives and appropriate tests of MMPI were done. The results have been analyzed with descriptive statistics of SPSS software.

Results: In this study, the most cases of committing suicide were within 15–25 age spans, with the following group profile. female (61%), married (53.22%), educated individuals with high school and diploma (35.76%), and middle class socio economic status(57.34%). 61.47% of these individuals were afflicted by psychological disorders with 58.72 percent were afflicted with personality disorders. The most used method for suicide was taking drugs and toxins (90.83%). Conflict with spouse has been found as most cause of suicide.

Conclusions: This study revealing that the prevalence of different risk factors that play a role in committing suicide are as follows: low level of education, end of adolescence and beginning of youth, female sex, being married, family problems specially among new married couples, psychiatric and personality disorders and easy access to drugs and toxins.

S321**Depression and anxiety in epilepsy: the association with demographic and seizure-related variables**

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Annals of General Psychiatry 2008, 7(Suppl 1):S321

Background: Depression and anxiety are common psychiatric symptoms in patients with epilepsy exerting a profound negative

effect on health-related quality of life. Several issues, however, pertaining to their association with psycho-social, seizure-related and medication factors, remain controversial. Accordingly, the present study was designed to investigate the association of interictal mood disorders with various demographic and seizure-related variables in patients with newly-diagnosed and chronic epilepsy.

Materials and methods: We investigated 201 patients with epilepsy (51.2% males, mean age 33.2± 10.0 years, range = 16-60) with a mean disease duration of 13.9 ± 9.5 years. Depression and anxiety were assessed in the interictal state with the Beck Depression Inventory, 21 item version (BDI-21) and the State and Trait subscales of the State-Trait Anxiety Inventory (STAI-S and STAI-T), respectively. The association of mood disorders with various variables was investigated with simple and multiple linear regression analyses.

Results: High seizure frequency and symptomatic focal epilepsy (SFE) were independent determinants of depression, together accounting for 12.4% of the variation of the BDI-21. The STAI-S index was significantly associated with the type of epilepsy syndrome (SFE). Finally, high seizure frequency, SFE and female gender were independent determinants of trait-anxiety accounting for 14.7% of the variation of the STAI-T.

Conclusions: Our results confirm the prevailing view that depression and anxiety are common psychological disorders in epileptics. It is additionally concluded that female gender, high seizure frequency and a symptomatic epilepsy syndrome are independent risk factors for the development of anxiety and/or depression.

S322**Personality disorders and violence**

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Background: The purpose of this paper is to review the most recent literature on the relationship between personality disorders and violent behavior. It does not aim to address the issue of a possible etiological connection between being early the victim of violent acts and latter developing a PD.

Materials and methods: Recent data suggest that PDs and especially antisocial and borderline are strongly related to the manifestation of violent acts. Substance abuse is another strong factor which could act either independently or additively. Biological factors seem to constitute a risk factor for violent behaviour independently of personality. Although IQ does not seem to relate to violence, some patients may manifest specific cognitive deficits. The ethical and legal questions posed by the above mentioned correlations are difficult to answer and research has not provided enough data on this issue yet.

Results: The most recent data support the relationship between antisocial personality and violence, especially when a substance abuse is also present, although the presence of confounding factors in the diagnostic criteria suggest caution in the interpretation of the literature.

S323**Prediction and prevention of suicide in patients with unipolar depression and anxiety**Xenia Gonda¹, Konstantinos Fountoulakis², George Kaprinis³ and Zoltan Rihmer⁴¹Clinical Psychologist, Department of Psychiatry, No. III, National Institute for Psychiatry and Neurology, Budapest, Hungary, Laboratory of Neurochemistry and Experimental Medicine, National Institute for Psychiatry and Neurology, Budapest, Hungary²Assistant Professor of Psychiatry, 3rd Department of Psychiatry, Aristotle University of Thessaloniki, Greece³Professor of Psychiatry, director of the 3rd Department of Psychiatry, Aristotle University of Thessaloniki, Greece⁴Director and Head, Department of Psychiatry, No. III, National Institute for Psychiatry and Neurology, and Professor of Psychiatry, Department of Psychiatry and Psychotherapy, Semmelweis Medical University, Budapest, Hungary*Annals of General Psychiatry 2008, 7(Suppl 1):S323*

Epidemiological data suggest that between 59 and 87% of suicide victims suffered from major depression while up to 15% of these patients will eventually commit suicide. Male gender, previous suicide attempt(s), comorbid mental disorders, adverse life-situations, acute psycho-social stressors etc. also constitute robust risk factors. Anxiety and minor depression present with a low to moderate increase in suicide risk but anxiety-depression comorbidity increases this risk dramatically. Contrary to the traditional psychoanalytic approach which considers suicide as a retrospective murder or an aggression turned inwards, more recent studies suggest that the motivations to commit suicide may vary and are often too obscure. Neurobiological data suggest that low brain serotonin activity might play a key role along with the tryptophan hydroxylase gene. Social factors include social support networks, religion etc. It is proven that most suicide victims had asked for professional help just before committing suicide, however they were either not diagnosed (particularly males) or the treatment they received was inappropriate or inadequate. The conclusion is that promoting suicide prevention requires the improving of training and skills of both psychiatrists and many non-psychiatrists and especially GPs in recognizing and treating depression and anxiety. A shift of focus of attention is required in primary care to detect potentially suicidal patients presenting with psychological problems. The proper use of antidepressants, after a careful diagnostic evaluation, is important and recent studies suggest that successful acute and long-term antidepressant pharmacotherapy reduces suicide morbidity and mortality.

S324**Peripheral Thyroid Dysfunction in depression: a review**Konstantinos Fountoulakis, Sotiris Kantartzis, Melina Siamouli, Panagiotis Panagiotidis, Stergios Kaprinis, Apostolos Iacovides and George Kaprinis
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The involvement of the thyroid gland and thyroid hormones is generally believed to be important in the etiopathogenesis of

major depression. The major support comes from studies in which alterations in components of the hypothalamic-pituitary-thyroid (HPT) have been documented in patients with primary depression. However, screening thyroid tests are often routine and add little to the diagnostic evaluation. Overt thyroid disease is rare among depressed inpatients. The finding that depression often co-exists with autoimmune subclinical thyroiditis suggests that depression may cause alterations in the immune system, or that in fact could be an autoimmune disorder itself. The outcome of treatment and the course of depression may relate to the thyroid status as well. Augmentation of antidepressant therapy with the co-administration of thyroid hormones (mainly T3) is a well-documented treatment option for refractory depressed patients. The review of the literature suggests that there are no conclusive data on the role of thyroid function in depression. It is clear that depression is not characterized by an overt thyroid dysfunction, but it is also clear that a subgroup of depressed patients may manifest subtle thyroid abnormalities, or an activation of an autoimmune process. There is a strong possibility that the presence of a subtle thyroid dysfunction is a negative prognostic factor for depression and may demand specific therapeutic intervention.

S325**The impact of detoxification on the coping strategies in a sample of inpatient alcoholics**Elias Tzavellas, Thomas Paparrigopoulos, Dimitrios Karaikos, Nikos Stefanis, Agellos Kompodoros and John Liappas
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Background: In our study we investigate some aspects of the coping strategies and the impact of detoxification on these characteristics in a sample of inpatient alcohol dependent individuals.

Materials and methods: The sample of the study comprised 200 Caucasian, Greek nationality patients (147 males, 53 females) randomly selected over a 3-year period, who fulfilled the DSM-IV diagnostic criteria for alcohol abuse/dependence, treated on an inpatient basis at the specialized drug and alcohol addiction service of the Athens University Psychiatric Clinic at the Eginition Hospital. Detoxification treatment was comprised of vitamin replacement (vitamin B complex, vitamin C, vitamin E) and oral administration of diazepam (30–60 mg daily in divided doses), with a gradual taper off over a week. Subjects were assessed with the Pilowski scale for hypochondria, the Leyton scale for obsessive-compulsive symptoms and the Sifneos scale for alexithymia. The questionnaires were administered at the beginning of the detoxification period and at discharge. Descriptive statistics are used for the presentation of results.

Results: Mean age \pm SD of the sample was $47,4 \pm 11,7$ years and mean daily alcohol consumption was $359,9 \pm 266,8$ gr/day. Upon admission the mean scores on the different scales were as follows: Leyton: $14,8 \pm 2,7$, Pilowski: $9,32 \pm 2,63$, Sifneos: $11,3 \pm 2,6$. After completion of detoxification the scores were: Leyton: $9,07 \pm 3,05$ ($P < .000$), Pilowski: $4,67 \pm 2,58$ ($p < .000$), and Sifneos: $10,6 \pm 2,2$ (NS).

Conclusions: Detoxification from alcohol appears to significantly change some aspects of the coping strategies of alcohol dependent individuals. Further investigation of this issue should be undertaken.

S326**Use of coercive physical measures in a Psychiatric Unit of a University General Hospital in Greece**

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Annals of General Psychiatry 2008, 7(Suppl 1):S326

Background: Coercive physical measures, such as seclusion, restraint and forced medication, are commonly used in psychiatric care units, though their therapeutic value has been a subject of serious debate [1]. To date, in Greece, there is no data available on the incidence of such measures.

Materials and methods: The form, frequency and duration of coercive physical measures applied on the total number of patients (n = 282) admitted in the Psychiatric Unit of the Ioannina University General Hospital during a six-month period (2006–2007) were studied retrospectively. Differences between the group of patients who received coercive physical methods and the patients who didn't receive any coercive method were analyzed by using chi-square and t-tests.

Results: 11.0% of admissions had been subjected in some form of coercive physical measures. 9.55%, 6.72% and 1.76% of admissions respectively were affected by seclusion in seclusion room, chemical and mechanical restraint. The mean duration of any one seclusion and mechanical restraint was 64.9h and the mean number of seclusion and mechanical restraint per affected case was 3.58. Statistical analysis between the group subjected into coercive measures and the non-subjected group showed association only with the type of admission.

Conclusions: The results presented here provide epidemiological data on the use of mechanical restraint and seclusion in a psychiatric unit of a General Hospital in Greece. Although there are different patterns in the use of coercive physical measures across European psychiatric units, the results of our study are in accordance with those of previous research [2, 3]. Further research in the field may contribute to achieve European standards for the use of coercive measures.

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S327**Study on the Greek demographic chart of psychic disorders**

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Annals of General Psychiatry 2008, 7(Suppl 1):S327

Background: This study is an attempt to review and examine issues concerning the prevention of mental disorder such as the network in Greek provinces and urban cities in relation to the family system.

Materials and methods: We investigated 60 cases (from 1998 until 2005), both from urban centers and provinces, randomly selected from those who contacted Association of Psychology and Psychiatry for Adults and Children (A.P.P.A.C.) for diagnostic and therapeutic reasons. Patients were grouped by age (0–18, 19–35, over 36), sex and according to the ICD-9 diagnostic criteria.

Results: According to the statistical analysis of data derived from 60 medical reports, we found that the first part of the hypothesis was confirmed. As we saw, 83.3% of the patients that came in A.P.P.A.C. have their permanent residence in urban areas. As far as the diagnosis is concerned, we have found that 78.3% of the patients were diagnosed as psychotic, neurotic or depressive. However the third part of our original hypothesis was not verified, since only 35% were over 36 years old. The majority of the patients (43.3%) were in the age cohort : 19–35.

Conclusions: Data collected shows that a major problem is the stigmatization of the psychiatric patient. Unfortunately, these patients, when visiting the therapeutic center seldom have already serious mental disturbance, which could have been avoided. On top of that the Greek social surrounding and family system do not allow the therapeutic intervention easily because the structure of the system is rigid. This rigidity leads them to see psychiatric help as a failure for the family. Information Greek people have about psychiatric and clinical work and therapy is distorted and very poor. In recent study 33.7% of Greek people ignore the essence of psychic help and 30% do not know diseases, caused by mental disturbances. However, 77% would like to learn more about this issue. The rapid disintegration of the traditional Greek community probably accounts for increased cases of mental disorder. Hence, it is essential to view individuals and families as biopsychosocial systems with certain structural characteristics and patterns of transaction, who can provide guidelines to set therapeutic goals.

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S328**Huntington's disease and dementia: from structural changes to clinical issues**

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Annals of General Psychiatry 2008, 7(Suppl 1):S328

Background: Huntington's disease (HD) is an autosomal dominant neurodegenerative disorder, which occurs in patients with a mutation in the IT15 gene (huntingtin). Clinically, the disease presents itself with not only motor symptoms but also dementia. The aim of this study is to review and present all recent data, specifically those related to the neuropathology, biochemistry and diagnostic methods of dementia in HD.

Materials and methods: Recent advances in molecular and genetic research of HD, derived from articles published in journals indexed in PubMed and other Entrez medical databases are being reviewed in an effort to elucidate mechanisms of cell death in the striatum and disruption of cortical-striatal circuitry. Neurophysiological and imaging diagnostic methods are analytically described, while the utility of other rating scales, like the Unified HD Rating Scale, in the differential diagnosis between HD and other dementias is evaluated according to several clinical trials, described in various biomedical literature citations.

Results: HD causes widespread CNS changes and systemic abnormalities, while cell death mechanisms involve variable processes, such as mitochondrial abnormalities, excitotoxicity, neuroinflammation and abnormal protein degradation [1]. Genetic testing, consideration of the inherited disease risk, clinical assessment, neuroimaging techniques, cognitive and psychological rating scales contribute significantly not only to HD diagnosis, but also prognosis [2].

Conclusions: HD is a devastating neurological condition of long duration. Many factors likely contribute to neuron death and dysfunction, making the systematic address of its pathology difficult. The first signs and symptoms are often present before impairments reach a point where the neurologic disease manifests itself, but usually are subtle and remain unnoticed [3, 4]. For this reason, clinical rating should focus not only on motor difficulties, but also on the neuropsychological performance of patients as a whole, aiming to detect different types of impairment within this neuropsychiatric disorder. Further research in relation to the understanding of the mechanisms involved in the memory and cognitive impairment of HD and enrichment of the diagnostic tools of all cognitive and emotional declines early in the disease process can have implications for prognostic assessment of persons at risk and eventually assist with early interventions.

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S329**Sex differences in asking for counselling and psychological support from a therapeutic center (A.P.P.A.C.)**

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Background: In the present study, the reasons why people ask for psychological support according to their sex is being investigated.

Materials and methods: Data was obtained from the Association of Psychology & Psychiatry for Adults & Children (A.P.P.A.C.) from January 2002 until December 2006. The sample size was N = 100, aged from 22 years to 65 years.

Results: Results indicated that there were population differences (62 women and 38 men) and statistically significant differences were found in the primary therapeutic goal of clients as well as their therapeutic course, according to their sex.

Conclusions: More specifically, results indicated that women tend to seek counselling mostly for themselves and secondary for a family member: women aged 25–35 want to deal with personal problems, women aged 35–45 seek for counselling (mostly relationship-based), while women aged 45–65 mainly wish to resolve problems with their children. On the other hand, men aged 30–50 years usually require counselling when their symptoms seem to disable them to successfully function in their workplace. Men over 50 years old ask for counselling in order to resolve a problem concerning their children. These men usually end their sessions when symptoms become less severe, while women are found to be more consistent towards therapy. Finally, as far as their socioeconomic status is concerned research results indicated that men of high socioeconomic status do not easily accept that they need counselling, while women of high socioeconomic status are more receptive towards counselling.

S330**Family support & substance abuse during puberty**

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Annals of General Psychiatry 2008, 7(Suppl 1):S330

Background: A high percentage of research suggests that support by the family, friends and society is related with limited occurrence of psychological symptoms. The results of studies, conducted with samples of adults, lead to the conclusion that societal support is negatively correlated with substance abuse. Also, concerning young people, parental support, which gives emphasis on emotional and material aspects is a protecting factor. Family support is a relationship of closeness and trust between children and parents.

Furthermore, there is evidence that children have better coping mechanisms in terms of negative events and they confront their consequences with positive attitude, when they are emotionally supported by their parents. The benefits of emotional support develop in two forms, either by increasing the protector factors, or by reducing the risk factors.

Materials and methods: In this investigation, three case-studies (A.P.P.A.C. patients) are presented and analyzed. Subjects selected were of the same sex (male) and of the same age-group (17 years, 18 years and 22 years old).

Results: Results indicated that the interaction between the family affect directly the ways self-destructive behaviour as it could be avoided, held or prevented.

Conclusions: It seems that lack of boundaries and ambiguous roles create high levels of entropy in any family system. This increased entropy is represented by self-destructed behavior; one of them is substance abuse.

S331

The effects of cannabinergic agents in the central amygdala of rats in the elevated plus-maze test of anxiety

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Background: Reports indicate that cannabinergic agents can change anxiety-related behaviours in both animals and humans. The amygdala is an important brain site in the modulation of fear or anxiety.

Materials and methods: In the present study, we investigated the effects of intracental amygdala microinjection of cannabinergic agents on anxiety-related behaviours in rats, using the elevated plus-maze test of anxiety. Intracental amygdala administration of ACPA a cannabinergic potent agonist (0.125, 1.25, 5 ng/0.5 µl bilateral) increased % open arm time and % open arm entries, but not locomotor activity, showing an anxiolytic response. Intracental amygdala microinjection of AM251 a potent CBI antagonist (2.5, 25, 100 ng/0.5 µl bilateral) did not change anxiety-related parameters in our experiments.

Results: The results suggest that cannabinergic agonists may reduce anxiety via CBI receptors in the rat central amygdala.

Conclusions: Cause that CBI antagonist didn't show any effect on anxiety we think that CBI isn't the main receptor in central amygdala.

S332

Chronic morphine treatment alters mRNA expression of CBI receptor in the rat amygdala

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Background: Repeated administration of opioid receptor agonists elicit a progressive enhancement of the behavioural responses. The phenomenon is known as behavioural sensitization. It has been shown that psychostimulants and opioids induce behavioural sensitization. Regulation of CBI receptor function is important for neural plasticity (such as behavioural sensitization).

Materials and methods: In the present study, rats were treated for 7 days with saline or morphine (10 mg/kg). After 24 h or 7 days wash out period, locomotion, oral stereotypy and state dependent memory in passive avoidance test of animals were measured in the presence or absence of CBI receptor antagonist (AM251, 5 mg/kg). Meanwhile the mRNA expression of CBI receptors in some areas of male rat brain (striatum, prefrontal cortex, hippocampus, hypothalamus and amygdala) were measured in chronic morphine treated animals by real time RT-PCR to evaluate the mechanism underlying behavioural responses.

Results: The obtained results indicated that chronic morphine treatment followed by 7 days (but not 24 h) wash out period produced behavioural sensitization in animal models of locomotion, oral stereotypy and state dependent memory. Furthermore pretreatment of animals with high dose of AM251 (5 mg/kg), in the test day did not affect the behavioural responses. In the genetic section, real time RT-PCR indicated that chronic morphine treatment followed by 7 days (but not 24 days) wash out period increased the mRNA expression of CBI receptors in the amygdala (by 55%) of the rat brain. While the expression of CBI in the other areas of brain were unaffected. Furthermore chronic morphine treatment did not alter the mRNA expression of CBI receptor in the brain of rat.

Conclusions: These data imply that CBI receptor is involved in the development (but not expression) phase of the behavioural sensitization.

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S333

Molecular investigation of Angelman syndrome in Greece. Screening for UBE3A mutations: preliminary results

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Background: Angelman syndrome (AS) is a severe neurodevelopmental disorder characterized by mental retardation, absence of speech, ataxia, seizures and hyperactivity. Individuals

with AS lack a normal active maternal copy of the UBE3A gene, encoding ubiquitin protein ligase (E6AP). In 80% of patients the clinical diagnosis is verified by molecular detection of one of the typical 15 q11–q13 abnormalities, including chromosomal deletions (70%), paternal uniparental disomy (3–5%) or imprinting centre mutations (7%). Heterozygous loss-of-function mutations of E6AP have been identified in approximately 8% of cases. UBE3A gene is imprinted in human brain, with the paternal allele being normally silenced. E6AP is a member of E3 ubiquitin ligase protein family which plays a role in defining substrate specificity of the ubiquitin-proteasome degradation system. The exact mechanism by which the defective E6-AP gene causes AS remains unknown. Clinical findings seem to be due to failure to degrade various proteins, accumulation of which may be harmful for an individual.

Materials and methods: 30 patients referred for AS, with no other molecular defect identified, were screened for mutations in the UBE3A gene (exons 9, 12, 15 and 16). Direct automated sequencing together with ECMA assay were performed in order to identify mutations in this group of patients.

Results: No mutations were detected in any of the UBE3A exons studied.

Conclusions: Further screening of all exons of UBE3A, as well as other genes, related to AS-like phenotypes, such as MECP2 gene, will probably identify mutations, confirming the clinical diagnosis and providing information about the molecular mechanisms.

S334

Daily stress and concept of self in Greek ambulance personnel

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Background: This pilot study investigated the prevalence of post-traumatic stress symptoms among professional ambulance personnel in South Greece and investigated the question: “Does self-knowledge have influence on how well one copes with the effects of daily work exposure from such events?” Little is known about the variables that might be associated with post-traumatic stress symptoms in high risk occupational groups such as ambulance service groups.

Materials and methods: Data were gathered from ambulance personnel by means of an anonymous questionnaire. Survey responses of 30 ambulance personnel from the city of Patras were analyzed. A correlation was established between post-traumatic symptoms using the impact of event scale (IES-15) and the Professional Self-Description Form (PSDF).

Results: Of those who reported a traumatic situation, 46,7% (14 of 30) scored > 26 on the IES-15 subscale. Scores > 26 indicate “PTSD caseness”. There were significant differences on PSDF subscales between those presenting with or without posttraumatic symptoms.

Conclusions: The mental health and emotional well-being of ambulance personnel appear to be compromised by accident and emergency work. The high prevalence of PTSD symptoms in ambulance personnel indicates an inability to cope with post-traumatic stress caused by daily work experiences.

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S335

Hashimoto encephalopathy: a case report of a mixed type

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Background: Hashimoto's thyroiditis is the most common form of thyroiditis. Since first description in 1966, this disorder was associated with encephalopathy, which is unrelated to thyroid's function status. Hashimoto encephalopathy is presented with neurologic or neuropsychiatric symptoms in euthyroid or mildly hypothyroid patients. Although elevated concentrations of antithyroid antibodies are requested for the diagnosis, no correlation between the severity of the syndrome and the antibody levels has been found.

Typically, two types of encephalopathy are described: a stroke-like type, with transient symptoms and focal neurological signs, with or without mental changes and a diffuse, progressive type with cognitive impairment, seizures and psychotic symptoms. Although most of reported cases of this rare syndrome are presented with the specific manifestations of each subtype, these two subtypes may rarely overlap, particularly in the long-term course.

The objective of this report was to describe a case of encephalopathy associated with thyroiditis Hashimoto, initially manifested with clinical symptoms of both subtypes.

Materials and methods: A female 55-year-old patient with history of Hashimoto thyroiditis, hypertension and hyperlipidemia, revealed transient episodes of few minutes duration each, with dystonic phenomena from facial and upper limbs muscles. In the same period, the patient developed a progressive speech and gait apraxia, mental and movement retardation and also a global cognitive impairment. The patient underwent clinical, laboratory, radiological and neuropsychological examination.

Results: The results of the laboratory tests and the neuropsychological profile are discussed.

Conclusions: Although Hashimoto encephalopathy is a rare clinical syndrome, it should be considered in the differential diagnosis of cases of Hashimoto's thyroiditis that develop

neurological or neuropsychiatric symptoms, even if the thyroid function is normal.

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S336

Location Learning Test: a new tool for the assessment of visuospatial learning and memory in patients with schizophrenia. Preliminary results
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Background: The Location Learning Test (LLT) is a brief, nonverbal measure of the ability to learn the spatial location of a series of everyday objects. Initially it was developed by Bucks and Willison (1997) for use in Alzheimer's disease patients. However, it could also detect visuospatial memory deficits in other disorders associated with damage to hippocampus and to parahippocampal gyrus, such as schizophrenia. The aim of this study was to examine the applicability of LLT in patients with schizophrenia.

Materials and methods: 15 patients with schizophrenia and 19 age-matched controls underwent the LLT. The test includes the location learning task of 10 everyday objects which are located on a grid 5X5. The subject is asked to put the cards with the objects in a net grid after having observed the grid with the objects in their original place. After 5 repetitions, a delayed trial follows. The performance between two groups was compared with the Mann-Whitney U test.

Results: The group of healthy controls performed significantly better in all tasks of LLT compared to the patients' group. The total displacement score and the delayed recall score were correlated significantly to the education level, whereas only the delayed recall score was correlated to the age. Although the learning index showed significant differences between groups, it had no correlation to the age or education level.

Conclusions: Findings indicate the sensitivity of the test for the detection of visuospatial memory and learning impairment, and also the applicability in patients with schizophrenia. However, further study for the validity of the test in this population is needed.

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S337

The impact of biomedical technology education on health care professional's technophobia

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Background: Technophobia, loosely defined as a fear of, or resistance to, new technology and computerization is recognized as a social characteristic in older ages but is potentially increased in specific domains.

Materials and methods: 310 health professionals were recruited into the study during the routine life long learning educational program (lasting 2 months) organized by the personnel educational service for the staff of the institution during 2004 to 2006. There are more female (72%) than males (28%). The mean age was 35.5 years and 40% of the sample had 5 to 15 years professional experience at the hospital. A questionnaire that consisted of 16 items was used for data collection before and after the education process.

Results: Overall, the mean difference for the two groups (before and after the computer education program) was respectively significant according to our results (mean $p < 0.001$). A total of 67% of health professionals were "unconfident" to use any kind of equipment. 65% of health professionals claimed that they had never obtained safety or health-related instructions for any kind of equipment before the course and overall, the mean difference for the two groups (before and after the computer education program) was respectively significant ($p < 0.005$).

Conclusions: Improved efforts such as inclusion of more computer education courses in health care curricular or in life long learning programs are required to increase the health care professional's access to computers and internet, conquering 'Technophobia' and computer anxiety.

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S338

The speech and language disturbances of aphasic Greek population

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Background: Purpose of the present study was to record the auditory disturbance that occurs in adult's aphasia for the Greek population. This record was made by the use of the Minnesota test for the differential diagnosis of aphasia (M.T.D.D.A) which was originally created by Hildred Schuell in 1946 [1] and was later revised in 1972 by Jenkins, Jimenes-Pabon, Shaw and Sefer [2] and preliminary standardized for the Greek language by Arampatzi and Tafiadis [3].

Materials and methods: The battery is used as diagnostic scale for the differential diagnosis of adult aphasia and measures the language skills in the aphasic population. The third part is specialized to track the speech and language disturbances (articulation, fluency, sensomonitor impairments without paralysis or paresis, sensomonitor impairment by phonemic disintegration in conjunction with reduce of auditory and proprioceptive discrimination, imperfect auditory recall of auditory patterns or defective auditory monitoring, any reduction of vocabulary, reduction of verbal retention span, and vocabulary comprehension), and was administered to 45 aphasic participants recruited from Greek health settings, aged 37–83 years. All the aphasic subjects had ENT examination normal.

Results: Statistical analysis of the data revealed that the results obtained are generally consistent with the results reported in other countries. No statistically significant differences were found between the results obtained for the Greek population and the results reported in the USA population in all speech and language subtests.

Conclusions: The battery appears to be sensitive to adult aphasic symptomatology for the speech and language disturbances in the Greek population and presents satisfactory criterion among the types of aphasia, as the aphasic participants assessed demonstrated clear patterns of deficit.

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S339

The Visuomotor and writing disturbances of aphasic Greek population

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Background: Purpose of the present study was to record the visuomotor and writing disturbances that occurs in adult's aphasia for the Greek population. This record was made by the use of the Minnesota test for the differential diagnosis of aphasia (M.T.D.D.A) which was originally created by Hildred Schuell in 1946 [1] and was later revised in 1972 by Jenkins, Jimenes-Pabon, Shaw and Sefer (1975) [2] and preliminary standardized for the Greek language by Arampatzi and Tafiadis (2006) [3].

Materials and methods: The battery is used as diagnostic scale for the differential diagnosis of adult aphasia and measures the language skills in the aphasic population. The fourth part is specialized to track the visuomotor and writing disturbances (impaired visuospatial perception, impaired visual recall, and reduction of language), and was administered to 45 aphasic participants recruited from Greek health settings, aged 37–83 years. All the aphasic subjects had ENT examination normal.

Results: Statistical analysis of the data revealed that the results obtained are generally consistent with the results reported in other countries. No statistically significant differences were found between the results obtained for the Greek population and the results reported in the USA population in all subtests.

Conclusions: The battery appears to be sensitive to adult aphasic symptomatology for the visuomotor and writing disturbances in the Greek population and presents satisfactory criterion among the types of aphasia, as the aphasic participants assessed demonstrated clear patterns of deficit.

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S340

Nicotine addiction among physicians in Greece

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Background: Physicians are highly respected in their communities acting as role models in issues related to health, and people turn to them for advice and consultation. For this reason, they are very important in advancing any tobacco control policies. According to a recent study overall, 38.6% of the Greek physicians (40% of men; 37% of women) currently smoke. Our pilot study tries to establish an estimate of the prevalence of nicotine dependence among smoking physicians as well as other health professionals in Greece.

Materials and methods: Anonymous standardized questionnaires including Fagerstrom Test for Nicotine Dependence (FTND) consisted of 6 items, were distributed to 75 practicing physicians (all smokers) in three cities in South-western Greece. In addition, there were other questions regarding demographic characteristics and awareness of the dangers of smoking. Doctors were visited at their working places (hospitals, private clinics, teaching hospitals) during one month period in 2007.

Results: Of those who reported smoking as "just a habit", 30,7% (23 of 75) scored > 6 on the FTND subscale. Scores FTND > 6 indicate "Nicotine Dependence". There were significant differences on demographic subscales between those presenting with or without nicotine addiction (i.e age, years of smoking and family conditions).

Conclusions: An extrapolation of our results to encompass all physicians in Greece would be reasonable, since physicians are a rather homogeneous group in this country. Our results are especially alarming because anti-smoking campaigns are usually more successful in doctors than in the general population.

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S341

The involvement of hippocampus and amygdala in schizophrenia

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Background: In recent years, using MRI studies, researchers try to establish valid hypothesis about the role of hippocampus and amygdala in schizophrenia.

Materials and methods: A critical presentation of meta-analyses and reviews of MRI and post mortem studies in schizophrenic patients that define the role of hippocampus and amygdala. Selective review of MRI and post-mortem studies between 1998–2005, including schizophrenic and bipolar patients, in Medline. Preferential focus on review articles and meta-analyses.

Results: Volume reductions of 5–8% are reported in 2/3 of the MRI studies. However these findings are based on many studies including the hippocampus, but only a few studies of amygdala. Therefore amygdala volume reductions can be refuted by unpublished negative studies. The same conclusion can be drawn for postmortem studies; hippocampal abnormalities are more robust than those of amygdala.

Amygdala lesions result in emotional deficits, such as facial affect recognition, that occurs also in schizophrenic patients, especially paranoid, compared to non-paranoid. The volume of amygdala may be inversely correlated with the number of X chromosomes. Hippocampus lesions can produce symptoms that resemble both the positive and the negative symptoms of schizophrenia. However those volume reductions are not specific findings of schizophrenia, since they are also found in bipolar patients and even in normal elderly persons.

Conclusions: More studies, with larger sample sizes, are needed to establish if schizophrenic patients possess reduced amygdala volume. We list some of questions remaining to be answered. First the specificity of the abnormality to schizophrenic patients and the possible relationship to specific symptoms or cluster of symptoms. Another open domain for research is whether structural abnormalities in schizophrenia such as in hippocampus or amygdala represent a possible genetic marker leading to a vulnerability disease or is a non specific feature in the cohort of psychiatric patients.

S342

Hippocampus and amygdala MRI studies: anatomy, current concepts of physiology and methodological limitations

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Background: Recent advances in MRI technique made possible the study of small cerebral structures, such as the hippocampus and amygdala. The aim of the study is to present the current MRI finding (anatomical boundaries, physiology and methodological problems) of the hippocampus and amygdala.

Materials and methods: Selective review of MRI and post-mortem studies between 2000–2006 in Medline. Preferential focus on review articles and studies including large number of participants.

Results: We present figures and MRI images to define the landmarks for hippocampus and amygdala, especially the relation between the temporal horn of the lateral ventricles. The current concept of amygdala physiology is that, with its connections to

medial prefrontal cortex, has a central role in emotional information processing (for example recognition of fearful stimuli) and also regulates autonomic responses. The hippocampus is the center of memory and learning (especially verbal) and it also involved in emotional processing of stimuli in working memory. The methodological problems rise from their small volumes, the total (right and left hemisphere) volume of each structure being < 0,5% of whole brain volume. Therefore many studies measure the hippocampal plus amygdala complex, which can be divided to posterior (mainly hippocampal) and anterior portion (mainly amygdala). Their small volume also results in reduced interrater reliability.

Conclusions: Both hippocampus and amygdala sustain functions that pertain to complex emotional processing. Their small size still results in difficulties of delineation, especially from the overlapping temporal horn of the lateral ventricles, in post-mortem studies.

S343

M.R.I. changes with increasing age: comparison between schizophrenics and health subjects

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Background: A critical review of M.R.I studies between the years 2001-2006, that include a re-evaluation after two to five years and the factors that influence possible changes.

Materials and methods: Selective review of M.R.I studies between 2001-2006, in Medline. Preferential focus on review articles, meta-analyses and studies including large number of participants.

Results: The variation in healthy brain structure depends on sex, handedness, genetics and experience. Sex variations are the most important factor, influencing the results of MRI studies including schizophrenic patients. Other crucial factors are the presence of clinical symptoms, medication status, family history and the presence cognitive deficits. In healthy subjects the maximum gray matter volume appears between 15-20 years of age and declines steeply with increasing age. The volume of the ventricles increases after the age of 20 and white matter volume increases slowly after 15-20 years of age. Schizophrenic patients compared with healthy volunteers have reduced total brain volume (β 12%), increased ventricles (α 20%), gray matter volume loss (β 1-5%), but no statistical difference in white matter volume. Some patients present increased ventricles during the first episode, but no further dilation. Others show no statistical significant enlargement at first, however after 2-5 years their ventricles become greater than those of healthy subjects. Gray matter is reduced from the first episode and continues to decrease steeper than in age matched healthy volunteers.

Conclusions: The neurodevelopmental model of schizophrenia explains only some of the MRI finding, such as increased ventricles, with no subsequent dilation. Some schizophrenic patients present (also) neuro-degenerate finding (such as

continuous increase of ventricles and gray matter volume loss), that might represent an accelerated aging process.

S344

B12, Folate and Homocysteine levels monitoring in Clinical Psychiatry

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Background: Valproic acid (VLA), carbamazepine (CBZ) and most of the newest anti-seizure agents have nowadays an established use in psychiatric pharmacotherapy, not only in bipolar affective disorder but also, off-license though in a variety of disorders. The effects of the anti-seizure medications on B12, folate and homocysteine levels have been a topic of research. The related I-carbon metabolism has been implicated in mental disorders. So, taking into account all the above we reviewed the literature about the potential benefit of monitoring B12 and folate levels on patients receiving anti-seizure medication, especially VLA or CBZ.

Materials and methods: We reviewed the guidelines as given by official Institutes in UK and USA, namely NICE (National Institute for Clinical Excellence) and APA (American Psychiatric Association). Articles related to the subject were also reviewed after relevant search via the Medline [1, 2]. As far as the involvement of impaired I-carbon metabolism in the neurochemistry of affective and anxiety disorders, it appears the evidence from both clinical (involving trials albeit of a small scale) and basic research, is suggestive of a degree of involvement in their pathophysiology (stronger evidence exists for folate). We also found evidence suggestive of adverse effects of the anti-seizure medications on B12, folate and homocysteine levels - none of which is routinely monitored (or advised so by guidelines) in patients receiving such medication for mental disorders.

Results: As far as the involvement of impaired I-carbon metabolism in the neurochemistry of affective and anxiety disorders, it appears the evidence from both clinical (involving trials albeit of a small scale) and basic research, is suggestive of a degree of involvement in their pathophysiology (stronger evidence exists for folate). We also found evidence suggestive of adverse effects of the anti-seizure medications on B12, folate and homocysteine levels - none of which is routinely monitored (or advised so by guidelines) in patients receiving such medication for mental disorders.

Conclusions: The findings both from clinical studies and basic science research suggest a role of the an impaired I-carbon metabolism in the pathophysiology of cognitive decline (including Alzheimer's disease) and mood disorders, especially depression with implications regarding treatment. There are also weaker indications of involvement in anxiety disorders. In brief, B12, folate and homocysteine are involved in very important central nervous system functions: Folate metabolism is linked to bipterin-dependent neurotransmitter synthesis and biogenic amine methylation with B12 involved as a co-factor. Homocysteine and its metabolite homocysteic acid, may have a direct neurotoxic effect, involving NMDA receptors. Homocysteine levels are increased in B12 and folate deficiency. It appears that the long term use of anti-seizure drugs, especially

carbamazepine and valproate has unfavorable effects on B12 and folate levels. Taking all the above into consideration, we find it reasonable to suggest that a six monthly or yearly monitoring of B12, folate and possibly homocysteine levels would be a cost effective intervention with advantageous effects in this group of patients.

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S345

Neuropsychological association between paranoid schizophrenia and delusional misidentification syndromes: an in between subjects design

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Background: Delusional Misidentification Syndromes (DMSs) have been observed in a variety of psychiatric and other medical conditions but they seem to be strongly associated with schizophrenia since they occur predominantly in the context of paranoid schizophrenia. Previous studies about a neuropsychological relationship between DMSs and schizophrenia have implicated cognitive functions performed by bilateral frontal and right hemisphere in both schizophrenia and DMS, but there are mainly case reports, lacking the appropriate controls. Aim of the present study was to investigate whether DMS in paranoid schizophrenia is mediated by a distinct neuropsychological substrate indicative of differential bilateral frontal and right hemisphere dysfunction.

Materials and methods: The sample of the study included 44 right-handed schizophrenic patients, 22 of them with DMSs and 22 without previous history of DMSs, matched for gender, age, education, severity and duration of illness. Both groups were on medication with comparable doses of atypical antipsychotics. The neuropsychological battery used was designed to assess cognitive functions mainly associated with right hemisphere and frontal lobe areas. DMSs were active and their counterparts were also deluded at the time of neuropsychological assessment. **Results:** No statistically significant differences were found between the two groups in terms of their mean performance in all neuropsychological tests. Both groups showed evidence of dysfunction in frontal and right cerebral regions.

Conclusions: Our findings show evidence of right hemisphere and frontal lobe dysfunction of equal severity in both groups of paranoid schizophrenic patients with and without DMS and suggest that DMS and paranoid schizophrenia share the same neuropsychological substrate.

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S346

Psychiatric Hospital staff's depression indices were not influenced by deinstitutionalization but by gender and years in work

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Background: The aim of this study was to assess the staff's depression levels of a Psychiatric Hospital that has undergone

transformation to a network of community-based psychiatric facilities.

Materials and methods: The Greek adaptation of Zung Depression self-Rating Scale (ZDRS) was anonymously completed by the working staff two years before and two years after the transformation of their hospital.

Results: Internal consistency of the scale was satisfactorily high in both administrations of the scale [Cronbach's $\alpha > 0.80$]. Deinstitutionalization had no statistically significant impact either on the overall depression scores as measured by the Symptoms Severity Score (SDS). There was no significant difference on the number of staff that had clinical (SDS > 70), mild (SDS:60–69) or minimal/mild (SDS:50–59) depression levels [$\chi^2(3) = 1.07, p = \text{NS}$] or were overall classified as depressed [$\chi^2(1) = 0.568, p = \text{NS}$]. Regarding specific items, after the deinstitutionalization people reported enjoying sex less, but regarding their lives as being more full. On the other hand, there was a mild correlation between SDS and years of work [$r = 0.137, p < 0.05$], as well as a significant effect of the female gender, after correction for age and years of work [$F(1,242) = 13.19, p < 0.001$]. Women scored worse on items regarding affection and somatic concerns.

Conclusions: This follow-up study verifies the previously found effects of the staff's gender and years of previous service on depression as measured by the ZDRS. The transformation of their hospital into community-based psychiatric facilities, as a direct result of the deinstitutionalization project, did not affect the staff's depression levels.

S347

The relationship of Body Mass Index to aspects of neurocognitive functioning in patients with schizophrenia and normal controls: a pilot study

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Background: The aim of this study is to investigate the relationship of bodyweight, sociodemographic data and clinical variables to aspects of neurocognitive functioning in schizophrenic patients compared to normal controls.

Materials and methods: The study sample included 100 patients suffering from schizophrenia (42 females and 58 males) aged 34 ± 9.82 and 80 normal control subjects (48 females and 32 males) aged 35.87 ± 12.62 . The clinical diagnosis was made according to DSM-IV-TR criteria. Age, height, weight, parental and maternal age at birth and level of education were recorded. Body Mass Index (BMI) was calculated. The psychometric assessment included the PANSS, the YMRS and the MADRS, while the neuropsychologic assessment included the Random Letter Test (RLT), the Graphic Sequence Test (GST), the Copy of Diamonds test (CDT), the Ray Figure and the Clock Drawing Test.

Results: The two groups did not differ in their BMI (schizophrenic patients: 24.35 ± 3.67 vs. controls: 25.50 ± 5.36 ; $p = 0.08$). Data analysis revealed significant correlations in the patients with schizophrenia only, between BMI and RLT Intrusion score ($R = -0.35$), education and RLT Omission score ($R = 0.30$),

PANSS-N score and CDT score ($R = -0.33$) and MADRS score and Mendez Clock Drawing score ($R = -0.43$). In normal controls significant were the correlations between the GST score and age ($R = -0.33$), BMI ($R = -0.23$) and education ($R = 0.24$).

Conclusions: The results of the present study suggest that there is a different and non-overlapping pattern concerning the relationship among sociodemographic variables, body weight and aspects of neurocognitive functioning. The relationship of BMI with concentration in patients with schizophrenia and with a prefrontal function test in normal controls suggests differences in the underlying mechanisms determining similar levels of appetite and body weight in the two study populations.

S348

Modulation of the acetylcholine-catecholamine balance in the cognitive processes and its correlations with the oxidative stress

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Background: Impairments of cognitive performance have been observed our previous studies in normal rats with muscarinic acetylcholine receptors (mAChRS), beta-adrenergic receptors (β AR) and D2-dopamine receptors (D2R) blockade, suggesting that these receptors have a facilitator role in learning and memory processes. Learning and memory processes are coordinated with different brain regions [1]. Since the oxidative damage may play a role in the aging process [2], including the associated decline, age-related impairment in spatial learning and memory may be alleviated by antioxidant treatment [3].

Materials and methods: Learning and memory tasks: Y-maze task; Step-through passive avoidance task.

Biochemical estimation: Determination of superoxid dismutase (SOD), Determination of glutathione peroxidase (GPX), Determination of malondialdehyde (MDA).

Results: We observed that the levels of superoxide dismutase (SOD) and glutathione peroxidase (GPX) decrease in rats with mAChRS, D2R and β AR blockade by means of scopolamine (0.75 mg/kg b.w., i.p.), spiperone (0.4 mg/kg b.w., i.p.) and propranolol (12 mg/kg b.w., i.p.), respectively, and the level of malondialdehyde (MDA) increase in the same rats, compared with saline-treated rats.

Conclusions: Muscarinic cholinergic and dopaminergic systems have a facilitating effect on mechanism that operates during the storage of information as memory engrams. We demonstrated that the increased oxidative stress is followed by cognition impairment in rats. Our findings support the hypothesis that oxidative stress plays a crucial role in brain dysfunction, contributing to the learning and memory deficits in rats.

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S349

Anthocyanins modify diazepam dependence in rats

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Background: Chronic use of high doses of benzodiazepines may lead to development of tolerance and dependence. Long-term administration of diazepam causes CNS changes: significantly increased amount of GABA required for neuronal activity inhibition; reduced efficacy of diazepam on GABA-evoked Cl⁻ currents [1]; functional changes in the chloride channel related to withdrawal signs [2]; changes in glutamate receptors [3]. Our previous data showed that anthocyanins diminished diazepam toxicity and significantly enhanced the survival of mice, treated with lethal doses of diazepam. Anthocyanins are naturally occurring flavonoids with various pharmacological activities. Literature data determine flavonoids as benzodiazepine receptor ligands [4]. We estimated withdrawal signs in the experimental rats in order to evaluate the effects of anthocyanins on diazepam dependence.

Materials and methods: Wistar rats were divided into three groups: I - diazepam; II - diazepam + anthocyanins 100 mg/kg; III - diazepam + anthocyanins 200 mg/kg. Rats were treated for 60 days. We evaluated fast breathing, hypermotility, seizures, tremor and piloerection as withdrawal signs after discontinuation of diazepam.

Results: Our results showed that the administration of anthocyanins significantly decreased abstinent signs of diazepam dependent rats. The most prominent effects were observed in the “diazepam + anthocyanins 200 mg/kg” group.

Conclusions: Anthocyanins administered together with diazepam are able to diminish diazepam dependence and can be used preventively in cases that require chronic therapy with benzodiazepines.

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S350

Efficacy of antidepressants in juvenile depression: meta-analysis

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Background: Safety of antidepressants in children and adolescents is being questioned and their efficacy in juvenile depression remains uncertain. Our aim was to assess antidepressant efficacy in juvenile depression.

Materials and methods: Systematic review and meta-analysis of randomised controlled trials (RCTs) comparing responses to antidepressants, overall and by type, vs. placebo in depressed juveniles.

Results: Thirty drug-placebo contrasts in RCTs lasting 8 weeks (median), involved 2979 subjects (456 person-years) of average age 13.5 years. Meta-analysis yielded a modest pooled drug/placebo response rate ratio (RR = 1.22, 95%CI: 1.15–1.31), with little separation among antidepressant-types. Findings were similar for rate differences (RD) and corresponding number-needed-to-treat (overall NNT: 10; TCAs [13] > SRIs [9] > Others [8]). NNTs decreased with increasing age: children (22) > mixed-ages (11) > adolescents (8).

Conclusions: Antidepressants of all types showed limited efficacy in juvenile depression, but fluoxetine might be more effective, especially in adolescents. Studies in children, severely depressed, hospitalised or suicidal juveniles are needed, and effective, safe, and readily accessible treatments for juvenile depression are urgently required.

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S351

Propylthiouracil causes behavioral changes in rats: the role of serotonin

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Background: Propylthiouracil is an antithyroid drug that inhibits thyroidal T4 production and peripheral conversion of

T4 to T3. The manifestations of hypothyroidism are low metabolic rate, lethargy, bradycardia, sensitivity to cold and mental impairment.

The aim of this study was to determine behavior and endocrine effects after chronic application of propylthiouracil and to measure the serotonin levels in the brain of rats, pre-treated or not with 5-hydroxy-tryptophan.

Materials and methods: Male Wistar Albino rats (140–160 g) were allowed free access to drinking water containing 0,02% Propylthiouracil for 5 weeks. The experimentally PTU- induced hypothyroidism was confirmed by a significant decrease of FT3 and FT4, and increase of TSH plasma levels. We performed Forced swimming test (FST) before and after 5-day-treatment with 5-hydroxy-tryptophan (50 mg/kg/i.p). The serotonin levels in the brain were also measured before and after 5-hydroxy-tryptophan application.

Results: The chronic exposure of Propylthiouracil led to alteration of rat behavior and changes in hypothalamic-pituitary-thyroid axis. A statistically important prolongation of the immobilization time was found in hypothyroid rats compared to controls. We also observed decrease of food intake and body weight. Brain serotonin levels of experimentally induced hypothyroid rats were decreased statistically significant (0,3366 + 0,04829 g/g). After mg/g in comparison with healthy controls (0,8178 + 0,0536 m 5-hydroxy-tryptophan treatment serotonin levels increased and depressive symptoms in rats diminished.

Conclusions: Our results indicate that PTU-induced hypothyroidism causes behavioral changes and depressive behavior in rats possibly via central serotonergic hypofunction. Depressive symptoms could be avoided via application of serotonergic drugs.

S352

Sleep disorders in children with neurological disorders – greatly unrecognized by caregivers and misdiagnosed by physician

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Background: Sleep is a complex physiological process influenced in children by temperament, diurnal activity, habits, parent-child interaction, and familial environment. Sleep necessary varies from a child to another and is depends of age. Sleep structure reflects the maturation process of the brain. It is recognized that sleep disorders are misdiagnosed in general child population; children with neurological disorders suppose a more careful attention from the caregivers, sleep disorders should be recognized and reported with a greater accuracy, or maybe not.

Materials and methods: To evaluate different clinical and social aspects of sleep disorders, we realized an analytical study, observational type, in a children population with neurological disorders, aged between 1–18 years, admitted in Clinic of Pediatric Neurology Cluj Napoca, Romania for a period of two months (1 March 2007–30 April 2007).

For a complete anamnesis about the child sleep we have made a questionnaire addressed to the parents, adapted from Kohrman HM 1999. The questions were comprehensible, addressed to medium intellectual level. In this study were not included children with associated febrile disorders, known to produce sleep disorders, other than the objectives of this study. The questionnaire was not directed to a certain type of neurological pathology. We used t-student test to processed the obtained data.

Results: Parents of 102 children responded to the questionnaire; 82% of them declared from the starts that are concerned about their child sleep, although only 9% of these children had a previous diagnosis of sleep disorder. From those with previous diagnosis of sleep disorder - 66, 66% asked for medical advised because of severe sleep alterations in children with complex neurological pathology and nocturnal seizures. Sleep disorders were present in fact at 41 percent of our study population (32 percent unrecognized by the parents and uninvestigated by the physician). Sleep time was between 12.50 hours and 7.45 hours, with a medium of 10.31 hours, with no statistical difference from children without neurological disorders.

From our study population 53% were not sleeping alone, but with one or both parents (32%), with grandparents (3%) or with siblings (18%). In these children we found a lower degree of emotional disorders associated, and sleeping with parents was found as a protective factor against stress.

Despite the fact that excessive watching on TV it is known that have a negative influence on the sleep-wake cycle, in our study population was not found a statistical significant relation in this regard. In our group time spent on TV was about 1.33 hours.

Conclusions: Sleep disorders are greatly unrecognized by the parents of children with neurological disorders, to identify these disorders physician needs pointed questions. There is not a significant difference between sleep time in children with neurological disorders and those without. Sleeping with parents, for children with neurological disorders could be a protective factor against emotional disturbances. Watching TV time had no significant relevance on sleep disorders in children from our study group.

S353

REM behavior disorder (RBD): demographic, clinical and laboratory findings in 18 cases

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Background: REM behavior disorder (RBD) is a rare parasomnia and very often is misdiagnosed. It is characterized by the intermittent loss or impairment of REM sleep atonia and by the appearance of elaborate motor activity associated with vivid dream-enacting behaviors.

Materials and methods: A group of subjects in whom the clinical history fulfilled the diagnostic criteria for REM behavior

disorder (RBD) of the criteria of American Sleep Disorders Association and Sleep Research Society (1997) described here were identified in our sleep unit between March 2000, and June 2007.

18 patients, (12) men and (6) women with a mean age of 70.5 ± 11 years. They all had a history of dream-enacting behaviors with a mean duration of 5.5 ± 9.5 years. Behaviors included talking (100%), shouting (78%), punching (74%), gesturing (63%) and kicking (65.3%). 15 subjects fell out of bed and 11 suffered lacerations in the face.

The frequency of episodes is variable, occurring once every 2 weeks to 4 times nightly for consecutive nights, and often increases over time.

Patients were interviewed regarding their sleep habits and underwent full PSG. The clinical evaluation of the patients consisted of a neurological examination, an interview with him/her, and an interview with his wife/husband. They also underwent a full laboratory and biochemical evaluation like a complete blood count, test of thyroid function e.t.c. As well as an E.E.G, a brain MRI and psychometrics tests (B.D.I, M.P.P.I).

Results: 4 patients diagnosed as idiopathic RBD and one of them developed Parkinson disease 9 years after appearing of RBD symptoms and 4 patients also suffered from sleep apnea. 9 patients who their MRI showed multi - infarcts lesions and 4 patients also suffered from sleep apnea. 5 patients suffered from drug-induced RBD (fluoxetine, paroxetine, mirtazapine, amadadine). 1 patient who suffered from neurinoma of right acoustic nerve.

On polysomnography, the atonia that normally accompanies REM sleep is disrupted by periods of sustained increased tone, increased phasic muscle activity, or both. Simple as well as complex coordinated movements of the extremities occur during REM sleep, whereas periodic and aperiodic movements of the extremities may occur during NREM sleep.

Conclusions: Diagnosis was delayed to our patients from 1 year to 14 years. Symptomatic RBD associated with several neurological disorders such as cerebrovascular diseases, or co-occur with neurodegenerative disorders such as Parkinson's disease and drug-induced cases.

Extensive neurological evaluations in humans suffering from both idiopathic and symptomatic forms have not identified specific lesions; however, findings in some patients suggest that diffuse lesions of the hemispheres, lesions in the pontine territory, or primary brain-stem lesions may result in the RBD.

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S354

The retrogression of the Alzheimer's disease for 5 years through a cognitive rehabilitation intervention. A case report

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Background: Although Alzheimer's disease is a neurodegenerative type of dementia, the recent literature suggests that cognitive rehabilitation intervention has satisfactory effects lasting at least for 2 years. We present a case-report of a 78 year high educated old man following such a program and the results of this program.

Materials and methods: The patient met the DSM-IV and NINCDS-ADRDA criteria. Laboratory, neuroimaging exams and detailed neuropsychological assessment were also performed. The neuroimaging data (MRI) showed atrophy of hippocampus and hypometabolism (SPECT) in temporal, parietal and frontal cortical areas. The formal diagnosis was probable Alzheimer's disease. We scheduled an individual cognitive intervention program 5 days a week for 4 months. A follow up, 6 months after the end of the program, showed a clinical and neuropsychological image compatible to normal aging. The following 4 years he was doing cognitive exercises for one hour, 3 times a week. During this program the patient was also treated with a cholinesterase inhibitor.

Results: In the 5th year of the follow up our subject showed a clinical and neuropsychological image of a mild cognitive impairment (MCI) patient. A summary of neuropsychological assessment is as follow: "MMSE = 25, FRSSD = 5, Trail Making A = 68", Trail Making B = 254, RBMT: direct and indirect story recall 3 and 0 respectively, Digit Forward and Backward of WAIS-R 5 and 3 respectively, Pyramids and Palm Tree 44/52, Boston Naming Test = 36/60, RAVT = 5 (Trial I), 1 (Trial I-V), 3 (Trial V-VI), Verbal fluency = 18, Clock design = 2/3.

Conclusions: The progress of Alzheimer's disease can be retrograded, in some cases, even for 5 years under a well-structured cognitive intervention program.

S355

Charting the maturation of the prefrontal lobes at school aged children and adolescents, using Event Related Potentials

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Background: The auditory Event Related Potentials (ERPs) is obtained by averaging electrical impulses recorded from certain areas of the scalp in response to oddball stimuli. The main

waveform that is presented is the P300 a positive waveform that appears at about 300 ms after the stimulus. Tracking the functional development of specific regions of prefrontal cortex is challenging for both technical and conceptual reasons.

Materials and methods: In this paper we are studying prefrontal lobe development and presenting results from 50 normal children, adolescents and young adults aged 6–20 years old using ERPs and especially the P300 waveform. A difficult auditory task was used in which subjects had to memorize the target tone (high pitch) that was presented in a series of standard (low pitch) tones. The probability of the target tones was 0,40. P300 latency was measured from the prefrontal lobe (Fpz) of the 10–20 system.

Results: The result suggests that the P300 latency decreases gradually as the age increased. Our analyses of P300 data show that the ERPs associated with these regions are still maturing into adolescents and that their latency and the morphology of this waveform appear with changes in this population.

Conclusions: The results of this study are going to be used as a pilot study for farther research that will take place at the laboratory of Neuropsychology of University of Thessaly.

S356

The effects of peripheral and central administration of hypericum perforatum L and the role of alpha-adrenergic system

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Background: In this study, the effect of peripheral and central administration of aqueous extract Hypericum Perforatum L (HP) on acute and chronic pain models using formalin and tail flick tests were evaluated.

Materials and methods: At first stage, for assessment of the antinociceptive effect intraperitoneal (i.p) of different dose of HP were used, in later stage, for central effects Hp was filtered and administrated intrathecal (i.t) and intracerebroventricular (i.c.v) and the last, Yohimbine and Prazocin were administrated before i.p injection of it.

Results: HP (i.p) with the above mentioned doses significantly produced analgesia in both tests. HP induced analgesia in the first phase of formalin and tail flick tests, while at higher dose produced analgesia in both phases of formalin and tail flick tests. The i.c.v administration of HP produced analgesia in both phases of formalin test, while it had no effect on tail flick latency. Yohimbine significantly reversed antinociceptive effect HP in the first phase of formalin test. Prazocin had no significant effect on formalin and tail flick tests.

Conclusions: According to our results peripheral and central administration of HP can produced analgesia. HP has an antinociceptive effect at spinal and central levels, and spinal effect seems to be more potent. Further investigation of the role of other neurotransmitter system such as opioidergic and serotonergic system is recommended.

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S357

Young people and binge drinking

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Background: Underage drinking contributes to the 3 leading causes of death (unintentional injury, homicide, and suicide) among persons aged 12 to 20 years. Most adverse health effects from underage drinking stem from acute intoxication resulting from binge drinking. Although binge drinking, typically defined as consuming 5 drinks on an occasion, is a common pattern of alcohol consumption among youth, few age-specific innovations have been implemented towards prevention, early intervention, and regulation of availability.

Binge drinking is the most common pattern of alcohol consumption among high school youth who drink alcohol and is strongly associated with a wide range of other health risk behaviors. Effective intervention strategies (eg, enforcement of the minimum legal drinking age, screening and brief intervention, and increasing alcohol taxes) should be implemented to prevent underage alcohol consumption and adverse health and social consequences resulting from this behavior. It is recommended that sensible drinking messages should emphasize the need to reduce binge drinking as well as to moderate overall weekly consumption and should be supported by policies to create environments that support sensible alcohol use. Views of youth organizations across Europe about alcohol policy measures are discussed.

S358

Effect of Rosiglitazone, on infarct volume and neurological deficits in local brain ischaemia

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Background: Stroke is accompanied by a robust inflammatory response, glutamate-mediated excitotoxicity, release of reactive oxygen species and apoptosis. Thiazolidinediones, which target the nuclear receptor peroxisome proliferator-activated receptor (PPAR)- γ , have been reported recently to exhibit potent anti-inflammatory and anti-oxidant actions and inhibit both neural excitotoxicity and apoptosis.

Materials and methods: The present study was conducted to determine whether rosiglitazone, a potent thiazolidinedione for PPAR- γ , would show efficacy against the cerebral infarction and neurological dysfunctions induced by embolic middle cerebral artery (MCA) occlusion in the rat. Focal ischaemic injury was induced by embolizing a preformed clot into the MCA. Rosiglitazone was dissolved in dimethyl sulphoxide and injected i.p. 1 h before MCA occlusion at doses of 0.033, 0.1, 0.3

or 1 mg/kg. Forty-eight hours after MCA occlusion, brains were removed, sectioned and stained with a 2% solution of 2,3,5-triphenyltetrazolium chloride and analysed using a commercial image-processing software program.

Results: When rosiglitazone was administered 1 h before embolization, it significantly reduced infarct volume by 48.2, 68.4% and 70.3% at doses of 0.1, 0.3 and 1 mg/kg, respectively ($P < 0.001$). Rosiglitazone-treated rats also demonstrated improved neurological functions. However, there were no statistically significant differences between control and treated groups in terms of brain oedema at 48 h after ischaemic injury.

Conclusions: The findings of the present study may support the idea of a potential benefit of thiazolidinediones in the management of ischaemic stroke.

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Detecting higher cortical function in patients with pervasive vegetative or minimally conscious state with qEEG coherence

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Background: Patients with Pervasive Vegetative State (PVS) or Minimally Conscious State (MCS) seem isolated from the external environment, mostly based on evidence from their inability to respond.

It is possible that some of these patients suffer from motor deficits that deprive them the ability to express themselves, but have some remaining perceptual abilities that cannot be observed. To date, such perceptual abilities have been detected with the use of Event Related Potentials (ERPs). The present study presents pilot data of an alternative method with the use of electroencephalic (EEG) coherence.

Materials and methods: Electroencephalic coherence was calculated for digitized EEG recordings from four patients with Pervasive Vegetative State (PVS) or Minimally Conscious State (MCS), while the patients listened to lists of words with personally related or unrelated content.

Results: Three out of four patients showed similar patterns of EEG coherence reactivity to the personally related words.

Discussion: The present pilot data suggest that EEG coherence may be a simple but sensitive tool to detect higher cognitive functions in seemingly unresponsive patients.