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Meeting abstracts

## 1st International Congress on Brain and Behaviour

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### S1

#### Resilience: a concept for the psychological approach of human behaviour

M Agathon

Honorary President, the French Association for Behavioural Therapy

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Human resilience has been described as the capability of living in a satisfactory and socially acceptable way with positive affects in spite of present or past stress or trauma. Although it is usually described in non-clinical populations, the concept of resilience might be useful for understanding occurrence of some psychopathological states such as anxiety and affective disorders. Resilience was found in children, adolescents, adults and aged who had been coping with adversity and were leading a successful life although they could remember and describe the critical events and reminisce about them.

Many factors such as learning, memory, emotion, including functions of the brain should be taken into account for the study of resilience but this paper is limited to its psychosocial components. At a first glance in the literature they appear more important than dimensions of the personality. Example will be given of social anxiety which often handicaps victims of various stressors: assertive training, used in behaviour and cognitive therapy, was found to have a positive impact for soothing social anxiety.

### S2

#### Progressive brain volume changes in the first year of illness predict five-year outcome of schizophrenia

W Cahn, NEM van Haren, H Pol, HG Schnack, E Caspers, DAJ Lapidus, RS Kahn

University of Utrecht, Utrecht, The Netherlands

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**Introduction:** In first-episode schizophrenia progressive brain volume changes have been found after the first year of the illness. This study examined associations between early progressive brain volume changes and five-year outcome in schizophrenia.

**Method:** Thirty-one first-episode patients with schizophrenia were included in this longitudinal study. MRI brain scans were obtained at inclusion (T0) and after 1-year (T1). Intracranial, total brain, cerebral gray and white matter, cerebellar, lateral and third ventricle volumes were measured. After a follow-up period of 5.3 (SD=0.8) years global outcome was measured with the Camberwell Assessment of Need (CAN) and clinical outcome was measured with the Positive and Negative Syndrome Scale

(PANSS). To examine associations between early progressive brain volume changes (T1 minus T0) and five-year outcome Pearson product-moment correlations were performed with intracranial volume and age as covariates.

**Results:** Total brain volume decreases over the first year correlated significantly with negative symptoms ( $r=-0.38$ ,  $df=27$ ,  $p=0.04$ ) at five year follow-up. Gray matter volume decreases correlated significantly with positive symptoms ( $r=-0.40$ ,  $df=27$ ,  $p=0.03$ ) and negative symptoms ( $r=-0.54$ ,  $df=27$ ,  $p=0.002$ ). Lateral ventricle volume increases correlated significantly with the total score of the CAN ( $r=0.54$ ,  $df=27$ ,  $p=0.003$ ).

**Conclusion:** These findings suggest that medium-term symptomatic and global outcome is predicted respectively by early gray matter loss and lateral ventricular enlargement. It furthermore underscores the importance examining dynamic rather than static changes in brain structures in relation to predicting outcome of schizophrenia.

### S3

#### Treatment of agitation in the general hospital setting

D Kandylis

Associate Professor of Psychiatry, 3rd University Department of Psychiatry, Aristotle University of Thessaloniki, Greece

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Agitation is a frequent and often complex clinical challenge to the hospital – based psychiatrist since it may lead to emergency hospitalization and can place patients and staff at risk. The first step in the evaluation is to identify whether a medical etiology for the agitation is present and to determine the general category of the disorder. Agitation can be seen in a number of different clinical conditions ranging from psychotic exacerbations in patients with schizophrenia to behavioral disturbances associated with organic factors. The determination of the aetiological factor of agitation and the diagnosis of the existent disorder are not always easy. The diagnosis is often unknown or provisional at best. So, agitation is an urgent situation in which the emergency team must operate immediately and, frequently, without complete diagnosis. Whenever possible patients should be offered choices in the selection of treatment. So there should always be attempts at trying to calm the patient by verbal means and trying to establish a cooperative relationship to reduce tension and to de-escalate the crisis before moving on to more intrusive strategies. If these interventions are not successful the use of emergency medication is desirable. The goals of a pharmaceutical intervention for this situation include rapid control of agitation, facilitation of therapeutic alliance and transition to longer-term treatment.

**S4****Optimizing the transition from acute episode treatment to maintenance therapy**

V Kontaxakis

*Associate Professor of Psychiatry, Eginition Hospital, University of Athens, Greece**Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S4*

Schizophrenia is a chronic and disabling mental disease. It is characterized by a complex of positive and negative symptoms associated with marked social and occupational dysfunction. There are four main phases of the disease: the acute phase, the resolving phase, the stable phase and the relapse phase. Most patients come to the clinic in the acute phase which is, often, characterized by agitation, hostility, positive symptoms and catatonic signs. The goal of therapy is the rapid reduction in the agitation and aggression. Conventional antipsychotics have been, for many years, the mainstay of treatment in the acute schizophrenic patient. Rapid neuroleptization was a commonly used strategy to control agitation and florid psychotic symptoms. Drugs were titrated until clinical improvement was observed. However, the last years, the use of this method has declined. Higher doses were associated with more neurological side-effects and clinical response was no greater than that seen with moderate doses. Nowadays, atypical antipsychotics (alone or in combination with benzodiazepines) are recommended as the first-line treatment in acute schizophrenia. These drugs have been shown to be as effective as conventional antipsychotics regarding positive symptoms with a much better safety profile, particularly with respect to motor side-effects. Risk factors for relapse include psychosocial stressors, substance abuse and discontinuation of the antipsychotic medication. The goals of the maintenance treatment are to maintain or to further improve symptoms remission, achieve psychosocial reintegration, improve quality of life and prevent relapse.

**S5****Rapid control of agitation in patients with schizophrenia**

J Yesavage

*Professor of Psychiatry, Director of the Aging Clinical Research Center, Stanford University School of Medicine, California USA**Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S5*

Ziprasidone IM is a short-acting formulation indicated for the rapid control of agitation in patients with schizophrenia, when oral therapy is not appropriate. It is usually used for a maximum of 3 consecutive days. The recommended dosing is 10 mg administered as required up to a maximum dose of 40 mg/day and doses of 10 mg may be administered every 2 hours. Some patients may require an initial dose of 20 mg, which can be followed by a further dose of 10 mg after 4 hours. Thereafter, doses of 10 mg may be given every 2 hours up to the maximum daily dose of 40 mg. This preparation is only for intramuscular use and may be used concomitantly with benzodiazepines. Several controlled clinical trials have documented the safety and efficacy of Ziprasidone IM when used as described in the package insert. In the 7-day study versus haloperidol Ziprasidone IM was superior to haloperidol IM in reducing symptoms of acute schizophrenia as measured by the BPRS and CGI-S scales. Ziprasidone also demonstrated significantly greater improvement than haloperidol in the BPRS total score in a 6-week study versus haloperidol at

the end of the IM phase. Finally, the transition from IM to oral therapy was smooth, with continued improvement in efficacy, as measured by the BPRS total score. In the United States accreditation of Mental Health facilities includes close scrutiny of every episode of restraint in acute psychiatry. Documentation of each episode is carefully verified and data collected longitudinally. Every effort needs to be made to make episodes few as possible and short as possible. I will discuss how Ziprasidone IM can play a role in the attempt to reduce duration of episodes of restraint.

**S6****High risk behaviours in young adults: is there a common substrate?**

A Botsis

*Research University Institute of Mental Health, Athens Greece and Vis. Assistant Professor of Psychiatry, Albert Einstein Medical School USA**Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S6*

As such, we call the behaviors an individual manifests that place his/her physical health and life under high risk. These kind of behaviors are due to some personality traits (emotional instability, impulsivity, aggression dyscontrol), psychiatric symptoms (severe anxiety, dysphoria) or disorders. High risk-taking behaviors are: 1) Drug use-abuse or addiction, 2) Alcoholism, 3) Suicidality, 4) Delinquency, 5) Violence, 6) An individual's tendency to engage very frequently in accidents, and 7) Sexual behaviors that are very risky for contamination from sexually transmitted diseases (i.e. AIDS). These behaviors are much more often among adolescents and young adults in comparison to individuals of other ages. As it could be understood, the above behaviors could be classified under three categories. Research data as well as clinical experience will be discussed that converge to the point that all these risky behaviors are correlated each other.

**S7****Mood stabilizers: lithium**

I Hatzimanolis

*Associate Professor of Psychiatry, Eginition Hospital, University of Athens, Greece**Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S7*

Although lithium has been used in the treatment of various psychiatric conditions in the past 4 decades, it is particularly beneficial for the acute and long-term treatment of mania and in some bipolar and unipolar patients, for prophylaxis and treatment of depression. In recent years, however, young physicians have largely ignored the benefits of lithium in favor of anticonvulsant or atypical antipsychotic pharmacotherapy for patients with bipolar disorder. Moreover, while lithium was studied extensively in the past, recent literature shows a paucity of controlled studies of the drug. The effects of lithium on depolarization-provoked and calcium-dependent release of dopamine and norepinephrine from nerve terminals in the central nervous system (CNS), neuronal second messenger signaling pathways, CNS cytoprotective proteins, and the distribution of Na<sup>+</sup>, Ca<sup>+</sup> and Mg<sup>+</sup> across neuronal membranes all have been suggested to contribute to its therapeutic effects. Adverse events occur in 35% to 93% of lithium-treated patients. Most of the common side effects, which include excessive thirst, polyuria, memory problems, tremor, weight gain, drowsiness and diarrhea, are troublesome rather than

life-threatening, but some, such as memory problems, tremor and weight gain, often lead to noncompliance. More recent studies have found that 42% to 64% of patients with bipolar disorder do not respond to lithium treatment, including patients with mixed states, personality disorders, comorbid substance abuse, mania secondary to other medical conditions, rapid cycling, or previous failed trials of lithium. The effectiveness of lithium prophylaxis appears to be dose dependent. It has been reported that a lithium dose that was adjusted to maintain a target serum concentration of 0.8 to 1.0 mmol/L was more effective at preventing relapse than a lower dose targeted to maintain a serum lithium concentration of 0.4 to 0.6 mmol/L. However, the higher dose was associated with an increased incidence of side effects. Finally, many patients discontinue their lithium use after a relatively short period of time. In an analysis of data from a large health maintenance organization, half of patients prescribed lithium discontinued it within about 10 weeks, and this discontinuation was associated with an increased likelihood of psychiatric hospitalization. It has also been shown that, occasionally patients stabilized on lithium of extended periods of time may become lithium-resistant after discontinuing the agent and then suffer a relapse.

### S8

#### Mood stabilizers: anticonvulsants

E Agelopoulos

Lecturer in Psychiatry, Eginition Hospital, University of Athens, Greece

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Mood stabilizers represent a class of drugs that are used in the treatment of bipolar disorder, as prophylactic agents against future episodes and as adjunctive antidepressant medication. The anticonvulsant drugs such as valproic acid and carbamazepine are efficacious drugs in the treatment of epilepsy and bipolar disorder. Regarding the way that these drugs exhibit their therapeutic effect in the above disorders, many mechanisms have been postulated. Among them regulation of the glutamate excitatory neurotransmission and GABA inhibitory neurotransmission are mostly studied mechanisms of anticonvulsants. Quite important extracellular effects of these drugs have not been excluded, as most available evidence suggests that the therapeutically relevant class of medications are in the interior of the cells. The mood stabilizers have been shown to modulate the activity of enzymes, ions, arachidonic acid turn over, G-protein coupled receptors and intracellular pathways involved in synaptic plasticity and neuroprotection. Understanding the therapeutic targets of mood stabilizers will undoubtedly lead to a better understanding of the pathophysiology of bipolar disorder and to the development of improved therapeutics for the treatment of this disease.

### S9

#### Novel anticonvulsants: a new generation of mood stabilizers?

L Lykouras

Associate Professor of Psychiatry, Eginition Hospital, University of Athens, Greece

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The second-generation anticonvulsants carbamazepine and valproate are widely used as alternative mood stabilizers to lithium. Third-generation anticonvulsants are increasingly being

used as mood stabilizers. Most of the current data are in the form of case reports, case series and open studies. Data from the two randomized controlled clinical trials suggest that lamotrigine may have efficacy in the treatment of bipolar depression and possible as maintenance agent. Gabapentin, tiagabine, and topiramate have been mostly evaluated as an add-on therapy in patients with bipolar disorders refractory to conventional mood stabilizers. The current results suggest that topiramate may be more effective in treating manic rather than depressive symptoms. Therefore, any conclusions of effectiveness requires confirmation in double-blind placebo-controlled trials

### S10

#### Atypical antipsychotic medication in the treatment of bipolar affective disorders

C Psarros

Lecturer in Psychiatry, Eginition Hospital, University of Athens, Greece

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Several mood stabilizers, such as lithium, valproic acid and carbamazepine are widely used for the prevention and treatment of bipolar disorders. However, there is number of patients unresponsive to either monotherapy or combination treatment. This proportion may be even higher in patients with mixed episodes or rapid cycling. Conventional antipsychotics have been used over four decades to treat bipolar disorders, especially those with psychotic features. It has been reported that they may induce or exacerbate major depressive episodes, while high incidence of extrapyramidal side effects has also been noted. Furthermore, literature review suggests that their long-term use may be related to poor functioning. Atypical antipsychotics characterized by a much-improved tolerability and safety profile can be used as an adjunctive therapy for psychotic bipolar patients or as alternatives for the treatment of bipolar patients with mania who have not responded to lithium or other mood stabilizers. It has been demonstrated that olanzapine monotherapy is efficacious in the treatment of acute mania. Certain atypical antipsychotics may possess antidepressant effects as add-on therapy in patients with mood disorders. The existing literature suggests their long-term use in low doses as adjunctive treatments of mood stabilizing agents in severe refractory patients. The issue of efficacy and tolerability of atypical antipsychotics alone or in combination with mood stabilizers in bipolar disorders is critical, challenging and warrants further exploration in the context of larger controlled studies.

### S11

#### Apathy in Alzheimer's disease

CH Derouesne

Professor of Neurology, University of Paris VI, Faculty of Medicine, Pitie-Salpetriere, France

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In the last few years, a growing number of studies have been devoted to affective disturbances in Alzheimer disease, AD. These studies showed that apathy is a symptom clearly distinct from depression, and that confusion between apathy and depression appears to be one major cause of variability in the assessment of the frequency of depression in AD. We present the results of four studies from our group, devoted to affective disturbances in AD. These studies showed that apathy is a major symptom in AD

which, usually, could be easily distinguished from depression. Apathy plays an important role for the early diagnosis of the disease, and is strongly correlated to impairment of daily living activities and to many psychobehavioral disturbances. Apathy is not a pathological entity, but a syndrome which could result from many different causes. On one hand it could be linked to brain lesions involving the cerebral regions underlying motivation. Different parts of the brain are involved in motivation, but their respective role remains ill defined according to the lack of a clear cognitive model of motivation. On the other hand, apathy can also be related to a psychological mechanism aimed to protect the patients from cognitive failures. We suggest that psychobehavioral manifestations in AD should be considered both from a biological point of view (primary symptoms mainly related to the location of brain lesions) and from a psychological point of view (secondary manifestations depending on the patients' and caregivers' reactions to the primary cognitive and affective symptoms of the disease). This distinction appears relevant to the care of the patient. In the first case, apathy hampers the management of the patient and should be fought against. In the second case, apathy is a psychological defense against major depression and should be managed with care.

## S12

### Depression in Parkinson's disease

E Stefanova

*Institute of Neurology in Belgrade, Yugoslavia*

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**Objective:** The current study estimated the cognitive impairment in depressed patients with Parkinson's disease (PD) and the interference on activity of daily living and quality of life.

**Method:** The study included a series of 26 PD patients with major depression, 16 PD patients with dystimic disorder, and 38 nondepressed PD patients. Also 37 neurologically healthy control subjects matched by age, gender and education were included in the study. Comprehensive psychiatric evaluations including the Structured Clinical Interview for DSM-IV and depression rating scales Hamilton Rating Scale for Depression (HDS) and Beck's Depression Inventory (BDI) were administered. The cognitive evaluation included the comprehensive classical and automated neuropsychological tests. All patients were rated on the Unified Parkinson Disease Rating Scale (UPDRS)-Activities of Daily Living (ADL) subscore. As a measure for self-evaluated emotional functional and social dimensions of health Parkinson Disease Questionnaire-39 (PDQ)-39 was applied.

**Results:** The executive and memory deficits are still present in major depressed PD group, even when the host of confounding variables like age, education, gender, age at onset of the disease, disease duration, disease severity, motor slowness, medication and general cognitive abilities. The major depressed PD patients were significantly more physically disabled than those with no depression in terms of ADL scores, and lower Quality of Life scale scores. In the presence of no difference in the disease duration between different PD groups, this corresponds to more rapid disease progression in major depressed PD group. The cognitive functioning, depression severity and motor slowness strongly interfere with the activities of daily living and overall quality of life in depressed PD patients.

**Conclusions:** These findings provide evidence that the more profound cognitive deficits in PD depressed patients are mainly

due to depression. Also, faster disease progression, greater functional disability and low quality of life are hallmarks for the PD with depression. Treatment of depression may ameliorate aspects of cognitive and functional dysfunction in the PD with depression.

## S13

### Cognitive dysfunction in Parkinson's disease

AD Korczyn

*Professor, Sieratzki Chair of Neurology, Director, the Neurological Research Institute, Tel-Aviv Medical Center, Tel-Aviv University Medical School, Israel*

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Advanced Parkinson's disease (PD) is frequently associated with dementia. The pathogenesis of this dementia is complex, related to deficiency of several biogenic amines and cortical Lewy body deposition, as well as co-existent age related brain changes, both of the Alzheimer's type and vascular. However, degeneration of the cholinergic neurons in the nucleus basalis of Meynert may have an important contribution to the cognitive decline. The dementia of PD has a grave effect on the quality of life of the patients and their caregivers, as well as negative effect on their survival. The treatment of dementia associated with PD therefore must encompass several agents. Cholinesterase inhibitors, such as rivastigmine, produced gratifying results. Future studies should define the exact role of this agent in the treatment of the dementia of PD.

## S14

### Treatment of psychosis in movement disorders

V Kostic

*Institute of Neurology in Belgrade, Yugoslavia*

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Psychotic symptoms, including hallucinations, delusions, delirium, sleep disturbances, are a common problem associated with movement disorders. For instance, psychosis as one of the most disabling levodopa-induced complication occurs in up to 30% of patients with Parkinson's disease (PD). The prevalence of psychotic symptoms in Huntington's disease (HD) ranges from 3.4–30%, while only schizophrenia-like expression was noted in 9% of HD patients. Psychosis can be more disabling than the motor symptoms in patients with movement disorders: it seriously influence the patient's ability to maintain independence and is among the greatest risk factors for nursing home placement. The conventional antipsychotics are poorly tolerated in patients with movement disorders, and in particular in PD patients, since they can induce profound worsening or appearance of parkinsonism and tardive symptoms. The atypical antipsychotic drugs (ie, clozapine, olanzapine, quetiapine, risperidone, etc.) offer improved therapeutic strategy that control psychotic symptoms without compromising motor function

## S15

### Cognitive deficits in multiple sclerosis

N Grigoriadis

*Lecturer in Neurology, 2nd University Department of Neurology, Aristotle University of Thessaloniki, Greece*

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Multiple Sclerosis (MS) is a representative autoimmune demyelinating disease of the central nervous system (CNS)

affecting mainly young adults. Clinician's interests are mainly focused on the physical impairment that MS may bring. However, during the past few decades there is an increasing awareness of cognitive dysfunction in MS patients, a symptom already described for MS cases by Charcot. It is estimated that cognitive dysfunction may be present in more than 50% of the MS patients during their lifetime and may cause a devastating impact on every day function, independently on the degree of physical disability. In several neuropsychological studies it has been reported that recent memory, attention, processing speed, visuospatial abilities and executive functions, are among the domains of cognitive function most commonly affected in MS. On the contrary, language skills and intellectual functions are generally preserved. However, patients may either underestimate their deficits due to metamemory impairment or overestimate them due to depression. In addition, one of the major problems in the every day clinical practice remains the assessment of cognitive function, since the mini – mental state examination which is included in a routine neurological evaluation, is insensitive to MS-related cognitive impairment, especially a non - severe one. It is therefore evident that a brief, cost-effective and reliable neuropsychological assessment may be of a great value and may contribute to a global evaluation of the disease progression in an individual patient. During the last decade, an enormous progress in MS treatment has been made. However, most clinical trials of disease modifying therapies have been focused on the role of the administered agents in controlling the physical disability of MS patients. Only in a few multicenter studies cognitive function was among the outcomes studied and preliminary results indicate that currently used immunomodulatory and symptomatic agents may positively influence the cognitive outcome of the patient. There is considerable hope that by altering the cerebral demyelinating process, a slower decline in cognitive functions may be accomplished. Furthermore, combination of drug therapy with cognitive rehabilitation techniques is expected to result in the improvement of the quality of life standards of the MS patients.

## S16

### Quality of life measurement and clinical practice in mental health: applications and correlations of quality of life instruments in Greek patients with schizophrenia

V Mavreas<sup>1</sup>, I Yfantopoulos<sup>2</sup>, A Karokis<sup>3</sup>,  
A Christodouloupoulou<sup>4</sup>

<sup>1</sup>Professor of Psychiatry, Director of the Department of Psychiatry, University of Ioannina, Ioannina, Greece; <sup>2</sup>Professor of Health economics and social policy University of Athens, Greece; <sup>3</sup>Health Economics Manager, Health Economics Unit, AstraZeneca S.A. Greece; <sup>4</sup>Health Economist, Health Economics Unit, AstraZeneca S.A., Greece

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The evaluation of health related quality of life (HRQL) has gained great importance as a measure of social and clinical outcome in schizophrenia. It extends beyond mere assessment of symptoms, and is also used in needs assessment and population based studies. Several studies have explored the usefulness of such indicators in assessing the overall individual and social impact of

mental health policy interventions or the introduction of new neuroleptic drugs. In Greece, there has been limited research on the evaluation of HRQL impact of antipsychotic drugs on patients with schizophrenia. In addition, more research is needed on the relationship between psychopathology and measures of quality of life. HRQL measurement for patients with schizophrenia has to address important methodological issues. The core domains of HRQL indicators include assessments of physical, social and psychological functioning, disease and therapy related symptoms and global assessment of health. Generic instruments, such as the SF-36 and EQ-5D have been used to provide HRQL estimates. Generic instruments allow for a global HRQL assessment and comparisons with other disease populations. However, in patients with schizophrenia, generic assessments should be accompanied by indices, which capture disease specific domains such as interpersonal relationships, instrumental role, intrapsychic foundations, disability assessments, etc. Disease specific scales are more sensitive in capturing HRQL changes, which result from organizational, clinical or pharmacological interventions. The combination of subjective and objective, as well as clinician assessed and patient reported outcomes measures provides a comprehensive HRQL assessment.

An open label, 52-week follow-up study of 170 patients is being conducted in 8 psychiatric wards in both psychiatric and general public hospitals in Greece. The objectives of the study are the following:

- i) the assessment of the impact of quetiapine (Seroquel<sup>®</sup>) on the quality of life of patients with schizophrenia for 1 year,
- ii) the relationship between psychopathology and HRQL outcome measures, and finally,
- iii) the possible correlation of the generic quality of life questionnaires with disease specific instruments
- iv) the assessment of psychometric properties (validity, reliability, reproducibility and specificity) and the cultural adaptation of the Greek version of a schizophrenia specific HRQL instrument, the Quality of Life Scale (QLS).

The outcome measures explored in the study include:

- i. the generic questionnaires SF-36, EuroQol-5D and WHO-DAS II,
- ii. the disease specific questionnaire Quality of Life Scale (QLS), which has been translated, validated and launched for the first time in a Greek patient population
- iii. the Positive and Negative Symptom Scale (PANSS),
- iv. the Clinical Global Impressions (CGI),
- v. the Brief Psychiatric Rating Scale (BPRS), and
- vi. the Extrapyrimal Symptoms Evaluation (ESE, Simpson-Angus).

Based on the preliminary analysis of 6 months follow-up data from the study, the panel session addresses the following core questions:

- To what extent does long term treatment with quetiapine improve the quality of life of patients with schizophrenia?
- Does long term treatment with quetiapine improve the psychopathology of patients with schizophrenia?
- How do HRQL indicators relate to changes in patients' psychopathology over time?
- Is it feasible to compare generic with disease specific HRQL indicators in the assessment of HRQL of patients with schizophrenia?
- What are the psychometric properties of the QLS scale? Is it a useful outcome measure for Greek schizophrenia patients?

**S17****Effects of cholinergic drugs on pilot performance**

MS Mumenthaler, JL Taylor, R O'Hara, L Freidman, J Yesavage  
*Stanford University School of Medicine Department of Psychiatry, California, USA*

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The cholinergic system of the CNS plays an essential role in attention, learning, and memory. For example, pharmacologic agents have been developed to increase cholinergic function in the brain to treat patients with Alzheimer's disease. There are currently two common pharmacologic mechanisms used to increase activation of cholinergic receptors: 1) directly through administration of cholinergic agonists, and 2) indirectly through administration of acetylcholinesterase inhibitors. To evaluate the kind and size of the effects of direct and indirect cholinergic drugs on performance, we compared the effects of nicotine (a direct cholinomimetic) and donepezil (an indirect cholinomimetic) on performance in older, normal subjects, using pilot performance as our model. Compared to placebo, both, nicotine and donepezil significantly improved overall pilot performance. Both cholinergic drugs showed the largest effects on flight tasks requiring sustained visual attention. We observed that although the two tested cholinergic drugs have different pharmacologic mechanisms, their effects on flight performance were similar in kind and size.

**S18****Tangles and neuron numbers but not amyloid load predict cognitive status in Alzheimer's disease**

P Giannacopoulos

*Professor of Psychiatry, Head of service, Department of Psychogeriatrics, University Hospital of Geneva, Geneva Switzerland*

*Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S18*

**Objective:** To examine the relationship between stereological estimates of Alzheimer disease-related pathology and severity of cognitive deficits in brain aging.

**Background:** Previous studies reported substantial contributions of neurofibrillary tangles, amyloid deposits, and neuronal loss to the development of dementia. However, the prediction of cognitive status based on non-stereologic quantification of these parameters has led to conflicting results. Such studies have measured densities, rather than absolute numbers, and most do not take into account the potential interaction between the above pathological hallmarks in a global multivariate analysis.

**Methods:** Clinicopathologic study in 22 elderly cases. Cognitive status assessed prospectively using the Mini Mental Score Examination (MMSE); stereologic assessment of neurofibrillary tangles (NFT), unaffected neurons and total amyloid volume in the CA1 field of the hippocampus, entorhinal cortex, and area 9. Statistical analysis was performed using both univariate and multivariate linear regression models.

**Results:** High total NFT counts but not amyloid volume were strongly associated with a lower number of unaffected neurons in all areas studied. A very high proportion of the variability in MMSE scores was explained by NFT and neuronal counts in the CA1 field (83% and 85.4%), entorhinal cortex (87.8% and 83.7%) and area 9 (87% and 79%); amyloid volume in the entorhinal cortex, but not in the CA1 field and area 9, accounted for 58.5% of MMSE variability. Multivariate analyses showed that total NFT counts in

the entorhinal cortex and area 9 as well as neuron numbers in the CA1 field were the best predictors of MMSE score.

**Conclusions:** These new stereological data indicate that neuronal pathology in hippocampal formation and frontal cortex closely reflects the progression of cognitive deficits in brain aging and Alzheimer's disease. They also demonstrate that amyloid volume has no additional predictive value, in terms of clinicopathological correlations, beyond its interaction with NFT

**S19****Immunity and neuron: new evidence relating immunoglobulins to cytoskeletal damage**

C Bouras

*Professor, Head of service, Department of Psychiatry, Division of Neuropsychiatry, University Hospital of Geneva, Geneva Switzerland*

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Previous studies have suggested an increased activation of humoral immunity in neurodegenerative diseases, it remains unclear whether this phenomenon is secondary to lesion formation or contributes directly to their development. Using stereotaxic injections in macaque monkey cerebral cortex, we studied the effects of human immunoglobulins on the neuronal cytoskeleton. Under these conditions, several MC-1-immunoreactive axons were observed in the vicinity of injection site. No MC-1 or TG-3 staining was detected in neuronal soma. Ultrastructurally, several axons in the same area displayed curly formations and accumulation of twisted tubules but not paired helical filaments. These data suggest that Fc fragment induce conformational changes of tau and subtle structural alterations in axons in this model. Immunocytochemical analyses in human autopsy materials revealed the presence of human Fc fragments as well as Fc receptors only in large pyramidal neurons known to be vulnerable in brain aging and Alzheimer's disease, further supporting a possible role of immunoglobulins in neurodegeneration. Moreover, the influence of human immunoglobulins Ig in neuronal cytoskeleton stability was studied in vitro. Here we show that human Ig and Fc fragments stimulate animal and human microtubule assembly by binding to microtubules via tau isoforms. In presence of Ig microtubules show increased aggregation twisting and rigidity. Non-immune Ig and Fc fragments promote microtubule assembly in temperature-dependent manner and stabilize microtubules at a molecular ratio of Ig per tubulin dimers. These in vitro data provide an experimental support for an immuno-mediated modulation of the cytoskeleton. These observations should be interpreted in conjunction with the consistent development of cytoskeletal pathology in the aged human brain, raising the possibility that nonspecific immune reactions may influence the neuronal cytoskeleton and participate in structural changes in the early phases of neurodegeneration

**S20****Clinical diagnosis of vascular and mixed dementia: is it valid?**

G Gold

*Department of Geriatrics, University Hospital of Geneva, Geneva Switzerland*

*Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S20*

Dementia due to atherosclerosis was described over a hundred years ago. The concept has since evolved to include multiple

physiopathological mechanisms related to deficiencies in cerebral blood supply prompting the use of the broader term vascular dementia (VaD). 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 sensitivity. Differential diagnosis is further complicated by the frequent occurrence of mixed dementia (MD), the coexistence of both VaD and Alzheimer's disease (AD). Several studies have demonstrated the influence of macroscopic vascular lesions on the clinical expression of AD thus providing support for including these lesions in establishing the neuropathological diagnosis of MD. However, the clinical significance of isolated microscopic ischemic lesions, which are frequently observed in elderly cohorts, remains obscure. To address this issue, we developed microvascular scores based on semi-quantitative assessments of demyelination, cortical and white matter gliosis, and microvascular infarcts in the anterior hippocampus, inferior temporal cortex, frontal cortex and parietal cortex bilaterally. We applied these scores to 45 consecutive autopsied dementia cases with Braak stages of II or less. Total microinfarct and demyelination scores explained 36% and 11% respectively of the variability in cognitive function as measured by the clinical dementia rating scale (CDR). Gliosis scores did not predict CDR stage. These results suggest that neuropathological criteria for MD should include semi-quantitative assessments of microscopic ischemic pathology which should take into account demyelination and cortical microinfarcts. Information obtained from clinicopathological correlations can provide crucial information for the development of better performing neuropathological and clinical criteria for both MD and VaD.

## S21

### Cognitive impairment in Parkinson's disease: limbic dementia?

E Kovari

Department of Psychiatry, Division of Neuropsychiatry, University Hospital of Geneva, Geneva Switzerland

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**Objective:** To examine the neuroanatomical background of cognitive decline in long-lasting Parkinson's disease (PD).

**Background:** Previous studies reported an association between cortical Lewy body (LB) formation and dementia in PD. However, it is unclear whether cognitive decline in this disorder is related to specific patterns of LB distribution within the cerebral cortex. Moreover, the prediction of cognitive status based on concomitant assessment of LB and Alzheimer disease lesions has led to conflicting results.

**Design:** Clinicopathologic study in 22 elderly cases with PD patients in whom parkinsonism preceded cognitive decline by at least 3 years. Cognitive status assessed prospectively using the Clinical Dementia Rating scale (CDR); quantitative assessment of LB, neurofibrillary tangles (NFT), and senile plaques (SP) was performed in Brodmann areas 9, 21, 24, 41 and the entorhinal cortex. Statistical analysis was performed using both correlation coefficients and logistic regression models.

**Results:** There was a highly significant correlation between CDR scores and regional LB scores in the entorhinal and area 24. LB and SP densities in the entorhinal cortex accounted for 36.2% and 19.3% of the variability in CDR scores. LB densities in area 24 could explain 25.2% of this variability. NFT densities did not

predict cognitive status. In multivariate models only LB densities in the entorhinal cortex and anterior cingulate cortex were significantly associated with CDR scores and explained 36.8% and 25.7% of its variability.

**Conclusions:** These results imply that an assessment of LB pathology limited to the entorhinal cortex and area 24 may be sufficient to predict cognition in PD. They also suggest that LB formation in limbic areas may be crucial for the development of PD dementia.

## S22

### Recent advances in the pharmacotherapy of Alzheimer's disease

G Mentenopoulos

Professor of Neurology, 2nd University Department of Neurology, Aristotle University of Thessaloniki, Greece

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Most drug research in AD has been directed at providing symptomatic cognitive enhancement through a variety of neurotransmitter manipulations. Cholinergic neurotransmission has been most frequently targeted in drug development for a variety of reasons. There is a well characterized degeneration of the acetylcholine (ACh) synthesizing neurons in the basal forebrain region and their cortical synaptic connections in AD. The severity of AD has been correlated to the degree of decline of choline acetyltransferase (CAT) the key synthetic enzyme of ACh. Impairment of number and function of muscarinic and nicotinic receptors have been implicated in the cognitive impairment of AD. It has been the interventions directed at the inhibition of cholinesterases (ChE) that have been the most successful to date at producing symptomatic benefit, measurably enhancing cognitive function. During recent years, treatment of cognitive impairment in AD patients has been made possible by the introduction of ChE inhibitors, such as rivastigmine, donepezil and galanthamine. The drugs improve memory, cognitive and global function in AD, probably augmenting cholinergic function. ChE inhibitors differ substantially in their pharmacological properties which may translate into differences in clinical efficacy, safety and tolerability. Galanthamine show a dual mode of action by the allosteric modulation, with clinically meaningful improvement on cognition in AD, Lewy body dementia, Parkinson's disease dementia and vascular dementia. Rivastigmine has demonstrated a strong action as a dual AChE and BuChE inhibitor. Recent reports focus on the role of Butyrylcholinesterase (BuChE) in AD. The activity of this enzyme increases during the progression of the disease while AChE decreases. Inhibition of both enzymes may have more prolonged clinical results. Recent findings indicate that both AChE and BuChE in addition to their role in neurotransmission may play a role in the formation of amyloid plaques. It is found that the activity of BuChE substantially increases in the affected areas of the brain. The reason for this increase is under research. It is believed that inhibition of AChE and BuChE can delay deterioration in AD patients. In addition to the cognitive and functional symptoms treatment with ChE inhibition may also improve the behavioural and psychiatric symptoms of AD and other dementias. Agitation, irritability, anxiety and depression may improve. Dual ChE inhibitors of AChE and BuChE can also improve delusions and hallucinations. This is very important especially in Levy body where antipsychotics can cause serious adverse events.

**S23****Alcoholism: social and family typology**

JP Roussaux

*Professor of Psychiatry, Catholic University of Louvain, Belgium**Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S23*

Whatever the aetiology, alcoholism is a family problem. Alcoholism of one member of a family determines the very life of the family. The attempt to apprehend in diagnosis and treatment this broader scope of the disorder enhances the therapeutic results. Systematic use of a model which allows to account for the socio-familial dimension, constitutes a progress, for the therapist and the therapeutic team as well as for the patient and his family. This paper develops a model which permits to differentiate forms of alcoholism, in order to be able to match them the most appropriate treatment or sequence of treatment, including the purely biological (e.g. for detoxification) as well as the psychological (family therapy) or social (rehabilitation). Most of the cases require a combination of the three approaches, even if one or the other may be dominating at a particular moment of this long term treatment. Furthermore, only active, organised and early prevention can, on the one hand, encourage people who are liable or tempted to resort to alcoholism to seek other, more effective long range solutions and, on the other hand, discourage potential co-alcoholics from undertaking a Sisyphus labour by practising pathogenic tolerance.

**S24****Quality of life and continuity of life of people living with psychosis**

A Janca

*Associate Professor of Psychiatry, Department of Psychiatry and Behavioural Science, Royal Perth Hospital, University of Western Australia, Perth, Australia**Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S24*

Over the years, the widely used concept of Quality of Life has got associated with many different meanings and thus became less useful in psychiatric research and clinical practice. In an attempt to find a measurement that is more appropriate for people living with psychosis, we have developed a novel concept entitled "Continuity of Life", which can be defined as "the degree to which an event or process (such as mental illness) has interrupted the continuity of life of an individual person's life with regard to his/her activities, hopes and plans. The Continuity of Life concept focuses on the present state as well as on future expectations of the individual and covers the following life domains: personal mental and physical health; access to material possessions and earnings; relationships with family members and friends; work, studies, professional career; leisure and recreation; civic duties and responsibilities; and personal beliefs and/or religious faith. With this definition in mind, we have subsequently developed a Continuity of life Interview – a semistructured instrument that is particularly sensitive to events such as admission to psychiatric hospital for a serious mental illness including schizophrenia, or the presence of obvious disability due to any cause. Psychometric properties of this instrument were evaluated in a psychiatric rehabilitation setting and the results demonstrated its appropriateness in assessing an individual's perception of psychotic illness-related disruption of relevant life areas and global life quality across the above-mentioned domains.

**S25****Quality of life in schizophrenia: the role of compliance**

V Mavreas

*Professor of Psychiatry, Director of the Department of Psychiatry, University of Ioannina, Ioannina, Greece**Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S25*

The assessment of outcome in schizophrenia has changed significantly in the last decade. The introduction of the novel antipsychotic drugs and the movement of community psychiatry and deinstitutionalization has shifted attention to functioning of the patient in everyday situations, satisfaction from life, the fulfillment of social roles and interpersonal communication. These domains constitute the so-called "Quality of Life" (QoL). QoL is a complex phenomenon, dependent on many factors that interrelate to each other. In schizophrenia in particular, research has underlined the importance of the following factors related to the QoL of the patients.

Experiences related to the medication. These refer to the effectiveness of the medication to alleviate positive as well as negative symptoms, side effects (e.g. extrapyramidal symptoms, sedation, effect on the sexual function) and their consequences in everyday life.

Insight of the patient into his condition and the restrictions imposed by the illness.

Compliance to medication, related to the above mentioned two factors. This refers to experiences with previous medications, the characteristics of current medication, dosage and the route of administration of the medication, as well as to idiosyncratic factors and factors related to the stage of the illness and symptomatology (responsiveness to antipsychotic drugs, insight). Compliance is also related to the type of care offered to the patient (continuity of care vs. fragmented care), in the sense that continuous care ensures that the patient is not lost during his "career", being followed up at regular times and having access to the services at all times.

There is very little research into the effect of compliance in the QoL in schizophrenia. The complexity of the phenomenon makes its study difficult, since the interrelations between factors are not yet clear as well the direction of effect. However, the existing research shows that improved compliance ensures a better QoL for schizophrenic patients. The introduction of the novel antipsychotics and newer formulations, with less side effects, is promising not only for their effectiveness in minimizing symptoms of the illness, but also for improving compliance and QoL.

**S26****The patient's compliance during the long-term therapy of schizophrenia: a challenge**

I Nimatoudis

*Assistant Professor of Psychiatry, 3rd University Department of Psychiatry, Aristotle University of Thessaloniki, Greece**Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S26*

Schizophrenia is a chronic mental illness. The long-term aim of treatment is the re-integration into the community and this can only be achieved by maintaining patients in a state of remission for as long as possible. With each successive relapse, the patient's long-term prognosis deteriorates and previous level of functioning are rarely achieved. In the case of schizophrenia continuous

medications is the most effective strategy against relapse, while discontinuation of antipsychotic treatment seems to be the most important predictor of relapse. Although the new generation of atypical antipsychotics are very effective for a broader range of psychotic symptoms (negative symptoms, cognitive, mood) and are better tolerated (primarily due to their favorable extrapyramidal side-effects profile) than conventional agents, the effectiveness of antipsychotic treatment is limited by non-compliance. Lack of compliance has been shown to highly correlate with relapse and re-hospitalization. Poor compliance is still a major issue in the long-term treatment of schizophrenia as the continuous treatment seem to be the exception rather than the rule for these patients. Research studies indicate that several factors influence the treatment compliance and the most important being related to illness (psychotic symptoms, cognitive dysfunction), side-effects of medications (mainly extrapyramidal symptoms), patients (little insight), social and environment issues and therapists. Pharmacological and psychosocial strategies can improve medication adherence and optimize long-term outcome for schizophrenics patients. Conventional antipsychotics are associated with high 1 year relapse rates (30–50%), although they are significantly lower in patients receiving depot formulation. Studies with atypical antipsychotics showed a lower relapse rates (20–30%). Combining the benefits of atypical with those of a long-acting (depot) formulation may further reduce relapse rates and enhance community re-integration. Psychosocial interventions targeted specifically to problems of poor compliance, concrete problems solving, motivational techniques and psycho-education of patients and families were found to be the most successful in promoting compliance.

## S27

### The future: towards long acting atypical antipsychotics

P Sakkas

Associate Professor of Psychiatry, Eginition Hospital, University of Athens, Greece

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Patient's compliance plays a crucial role, in the long-term outcome in schizophrenia. Long acting antipsychotics, have the potential to improve compliance, and therefore sustain symptoms remission, prevent relapses, patient's readmission, and overall improve level of functioning and patient's quality of life. However, conventional antipsychotics reveal low efficacy and high side effect profile. On the other hand, oral atypical antipsychotics have proven a better safety profile and an improvement in patient's cognitive function, which leads anyway to better compliance. Thus, risperidone long acting injection, is an important development in schizophrenia treatment; one step further of the development of the oral atypical antipsychotics. Biweekly injections, after a starting four weeks latency period, provide relatively little fluctuation in risperidone plasma levels, compared with oral intake. This gives the patient continuous antipsychotic cover and reduces the risk of adverse effects that can occur when plasma levels peak. After administration of risperidone long acting injection, the polymer matrix encapsulating the drug gradually degrades, giving a slow, steady release of active drug over six to seven weeks. Risperidone long acting injection is well tolerated. Both 12-week and one year trials, reported a low risk of side effects, which makes medication much more acceptable to the patients, so they are more likely to

continue taking it. Schizophrenic patients needing long term treatment can take advantage of the wide-ranging benefits of risperidone long acting injection.

## S28

### Current approaches to psycho-oncology

V Iacovides

NHS Director, Department of Psychiatry, Anti-cancer Hospital 'Metaxas', Athens Greece

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Psychooncology has today an accepted role within the Oncology community and Liaison Psychiatry. Increasing knowledge about the psychosocial and psychobiological dimensions of cancer, deriving from clinical work and research, has broadened its interests and at the same time served as the ground for more effective interventions concerning the psychosocial problems that arise in the course of the cancer patients' treatment. In addition, it provides new insights regarding the psychological processes or behaviours that may influence cancer morbidity and mortality. Clinical experience and research concerning quality of life, psychoneuroimmunology, meta-analysis of psychotherapeutic interventions etc, have redirected psychooncology towards new fields. The recognition of the genetic basis of increasingly more tumours prompted Liaison psychiatry to study cases with high genetic risk and studies have sought the impact of this factor on the emotional condition and quality of life of these individuals. Furthermore, the impact of bilateral prophylactic mastectomy or prophylactic oophorectomy on the adjustment of these patients and on the awareness of their bodies has been evaluated. Finally, the establishment of the importance of the immune system which not only functions as a surveillance mechanism but also is involved later in the disease progress revived hopes concerning the role of psychotherapeutic interventions. Numerous kinds of psychotherapy interventions, such as brief crisis counseling, individual or group psychotherapy, psychoeducational interventions, cognitive-behavioral interventions, art psychotherapy etc, are now available for patients and some of these have a positive impact in survival. Psychooncology was the first from all Liaison Psychiatry subspecialties, who changed the traditional way of assessment by using rapid screening tools such as the Distress Thermometer proposed by the National Cancer Centers Network.

## S29

### Brain mechanisms of emotion: initial MEG findings

A Papanicolaou

Professor and Director, Division of Clinical Neurosciences, Department of Neurosurgery, University of Texas - Huston Medical School, USA

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In a series of two experiments we sought to identify spatio-temporal brain activation profiles representing the neurophysiological mechanisms generating affective experience. Magnetoencephalography (MEG) was used to acquire these profiles in 12 healthy participants while they viewed pictures rated as affectively neutral, and pictures rated as affectively positive and affectively negative. Consistent activation of the occipital and posterior basal temporal cortices was observed in each subject in both experiments. This pattern of activation occurred immediately after stimulus presentation, lasted approximately

270 ms. and was common to all stimuli, both affective and affectively neutral. It is, therefore, not affect-specific but it represents the brain mechanisms of visual recognition. A second pattern of equally consistent activation followed the first. This pattern was obtained during the negative affect condition only. It involved activation of the left mesial temporal cortex and was observed in every subject during both experiments. In addition, during the second experiment, this pattern included consistent activation of the left cingulate gyrus. These results constitute the first demonstration of the efficacy of functional neuroimaging to identify structural components of the brain mechanisms of affective experiences in individual subjects, without the use of group statistics. They also constitute the first demonstration of the capacity of MEG to identify distinct brain mechanisms of recognition versus affect production with millisecond resolution.

### S30

#### Psychotic symptomatology: diagnostic considerations

K Phokas

Associate Professor of Psychiatry, Director of the 2nd University Department of Psychiatry, Aristotle University of Thessaloniki, Greece

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In psychiatry we deal with symptoms and signs. Symptoms are subjective, but signs are objective. If a patient complains that he is depressed, this is a symptom. On the other hand if the doctor observes agitation in a patient, this is a sign. In psychiatry symptoms and signs overlap very often they are not clearly distinguished. This results to the fact that in psychiatry often we describe a cluster of symptoms and signs as a syndrome rather than a distinct disorder. The use of structured interviews increases the reliability of observer-rated clinical symptoms assessment. A detailed clinical history, together with a detailed account of patient's subjective experiences and psychopathology, is very important, because this leads to a correct and complete diagnosis. A correct diagnosis is essential for a precise and proper treatment planning. Diagnostic categories are based on signs and symptoms within specific time frames, but pathognomically specific signs and symptoms are rare. The majority is non-specific and they are seen in different disorders. Sometimes they have courses of their own, different from the course of the disorder or the other symptoms. A major difficulty in evaluating psychotic symptomatology is the fact that different observers interpret symptoms and signs differently when examining the same patient. This is due to a number of reasons, but leads to reliability problems, which reflect to the diagnosis. When evaluating psychotic symptomatology we come to the question if a symptom is primary or secondary. The answer is not always easy and clear, because of the inability to understand more clearly the origin of various symptoms. It is very important to distinguish between primary and secondary negative symptoms in schizophrenia. Primary negative symptoms are caused by the same psychopathology with schizophrenia and often they are obscured by the positive symptoms in the acute phase. Secondary symptoms are caused by the disorder itself or by the medication for the treatment of the disorder. It is important to clearly demonstrate the origin of these negative symptoms, because of the different treatment planning and the different prognosis. All the above suggest that a complete assessment of the psychotic symptomatology of the patient, based

on detailed history and on information from patient's family and social environment, is essential and of great value in order to reach to a correct and precise diagnosis, which leads to the appropriate treatment planning.

### S31

#### The revised dopamine hypothesis: implications on our understanding of psychotic symptomatology

N Stefanis

Lecturer in Psychiatry, Eginition Hospital, University of Athens, Greece

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A complex dopaminergic dysregulation may underlie the neurochemical pathogenesis of schizophrenia. How this dopaminergic dysregulation arises in vulnerable individuals is unknown. An indirect insight into dopaminergic regulation can be achieved by examination of COMT (catechol-O-methyltransferase) genotyping, variants of which, have differential impact on prefrontally mediated dopaminergic neurotransmission. As part of the ASPIS project (Athens Study of Psychosis Proneness and Incidence of Schizophrenia), we have genotyped 547 apparently healthy young males who also completed a computerised neurocognitive battery and dimensional self rated schizotypy questionnaires. We hypothesized that negative schizotypal personality traits, which often in retrospect precede the onset of overt positive psychotic symptoms, will be associated with the high activity COMT allele, indicative of a relative hypodopaminergia in the PFC. We find a clear effect of COMT genotyping on schizotypy self rated measures and in particular a strong association between the high activity COMT allele and the negative schizotypy factor derived from Confirmatory Factor Analysis of the schizotypy scales. We propose, that the negative-social deficits in the population are associated with a trait prefrontal dopaminergic hypoactivity, on which later on in the process of the disease, a subcortical hyperdopaminergic state is superimposed, coinciding with the development of positive psychotic symptoms.

### S32

#### Atypical antipsychotics: similarities and differences at the synaptic level

D Sanger

Sanofi-Synthelabo Research, Bagneux, France, European Editor, Behavioural Pharmacology

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A number of so-called atypical, or new generation, antipsychotic drugs have been introduced into clinical practice in recent years and provide significant advantages in terms of tolerability and, under some circumstances, efficacy. Like classical neuroleptics, all these newer drugs have antagonist actions at dopamine D<sub>2</sub> receptors in the brain. The question has been raised, therefore, of the pharmacological mechanisms which are responsible for the atypical profiles of the new drugs. In a number of cases, antagonism at the 5-HT<sub>2A</sub> subtype of serotonin receptors may be involved. However, it is clear that this activity is neither sufficient nor necessary to produce an atypical profile. Recent findings with two of the newer drugs, amisulpride and aripiprazole, have swung the spotlight back on to dopamine. Amisulpride has high affinities for dopamine D<sub>2</sub> and D<sub>3</sub> receptors without appreciable affinity for other neurotransmitter receptors. In the clinic it shows efficacy

against positive and negative symptoms of schizophrenia without producing Extrapyramidal Side effects. The recently introduced antipsychotic, aripiprazole, also seems to show good clinical efficacy with few adverse effects. This drug also seems to act predominantly at dopamine receptors although a role for serotonin has yet to be completely ruled out. Explanations for the atypical clinical profiles of certain selective dopaminergic antipsychotics include selectivity for dopamine receptors in cortical and limbic brain regions, preferential activity at different dopamine receptors, partial agonist activity, and fast dissociation from dopamine receptors.

### S33

#### Choosing among atypical antipsychotics based on clinical data

A Mortimer

Professor of Psychiatry, University of Hull, UK

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At least six atypical antipsychotics are now available worldwide for the management of schizophrenia, with more in development. Influential guidelines for instance those produced in the UK by the National Institute of Clinical Excellence (NICE) recommend first-line use of atypical drugs in many, perhaps most, clinical situations. Unlike conventional antipsychotics, the atypical drugs manifest consequential differences in mechanism of action and side effect profile, which confront the clinician with a complex treatment choice. Despite these differences and some new problematic side effects such as weight gain and type II diabetes with some options, market share evidence suggests that drug choice is not entirely based on individual clinical factors. Head-to-head comparisons of atypical antipsychotics are few. This presentation will explore the differences between atypical antipsychotic drugs and will cover the existing 'head to head' comparisons, focussing on amisulpride versus olanzapine and amisulpride versus risperidone. Some conclusions will be drawn regarding rational clinical choices and optimal patient management.

### S34

#### Do atypical antipsychotics fail to exert cognitive sparing effects? respect cognitive function?

C Papageorgiou<sup>1</sup>, P Oulis<sup>1</sup>, A Rabavilas<sup>2</sup>

<sup>1</sup>Assistant Professor of Psychiatry, Eginition Hospital, University of Athens, Greece; <sup>2</sup>Professor of Psychiatry, Eginition Hospital, University of Athens, Greece

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Atypical antipsychotics appear to be effective in treating hallucinations and enhancing cognitive function in schizophrenia. However, the underlying psychophysiological mechanisms of these deficits and the effects of treatment on this dimension of illness remain unclear. Since the P600 component of event-related potentials represents 'the second-pass parsing process' of information processing, the present study focuses on P600 elicited during a working memory test in sixteen male schizophrenic patients experiencing auditory hallucinations before and after having been treated with clozapine and olanzapine, and thirteen male normal subjects matched for age and educational level. Before treatment patients, as compared to controls showed reduced P600 amplitudes on right parietal region, while in the remitted phase demonstrated significantly

lower P600 amplitudes located on the right parietal and temporofrontal areas, as compared to themselves before treatment and to normal controls. The patients' memory performance before and after treatment remained significantly less than that of healthy controls. These findings may indicate that auditory hallucinations in schizophrenia are associated with abnormal aspects of second-pass parsing process of information processing. Additionally, the present study casts doubts regarding the cognitive sparing effect of atypical antipsychotics, albeit they mediate symptom improvement.

### S35

#### Cognitive enhancement in schizophrenia with pharmacological interventions

T Sharma

Professor of Psychiatry, Director of the Clinical Neuroscience Research Centre, Dartford, Kent, United Kingdom

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Schizophrenia, the most severe form of psychopathology, affects about 1% in the general population. Cognitive impairment is a central feature of this illness. Most patients have a poor functional outcome, including deficits in social, occupational, and self-care activities. It is the most expensive psychiatric disorder to treat. The cost borne by the society in terms of social welfare administration and criminal justice, the time spent by unpaid caregivers, and the great loss of productivity due to the illness itself, are perhaps greater than the direct costs, such as, hospitalization. Functional deficits in schizophrenia are most strongly predicted by the current severity of cognitive impairment, followed by the severity of negative symptoms. Severity of positive symptoms is not strongly associated with the level of functional impairments, even in those with very poor outcome schizophrenia. There is thus an urgent need to find strategies for improving cognitive functioning in schizophrenia. It is widely felt by clinicians that conventional antipsychotic drugs have potent therapeutic actions on psychotic positive symptoms, but relatively weak actions on negative or cognitive symptoms. Atypical antipsychotics have been found to have greater effects on cognitive and negative symptoms than conventional antipsychotics, thus showing promise for cognitive enhancement and thus improved outcome of this illness possibly a result which may be due to the effects of 5HT and other neurotransmitter systems and normalisation of dopamine function by these compounds. Social cognition and learning are probably the domains most likely to have relevance to functional outcome. Facilitation of central cholinergic activity may form another potential treatment strategy for cognitive impairment in this population, since lesion and pharmacological studies in experimental animals and pharmacological probe studies in normal volunteers have repeatedly demonstrated a relationship between central cholinergic activity and cognitive functions, such as learning, memory and attention. Functional MRI (fMRI) is a non-invasive technique with good temporal and spatial resolution. It requires no radioactivity and offers the ability to map, almost in real-time, the physiological events occurring in the brain. fMRI can be used as a tool to map the longitudinal effects of antipsychotic drugs on the brain in schizophrenia. It allows us to carry out repeated measurements of cerebral neuronal activity and to investigate functional changes in the brain in treatment responders and non responders. It is thus possible to map the

functional anatomy of neurocognitive improvement with atypical antipsychotics in schizophrenia. This presentation will outline new methods of brain imaging and how these methods may allow us to understand the long-term effects of cognitive improvement with antipsychotic drugs in schizophrenia

### S36

#### Cognitive deficits in severe mood disorder: similar or different from schizophrenia?

G Goodwin

Professor, Department of Psychiatry, University of Oxford, Warneford Hospital, Oxford, UK

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The border of affective psychosis with schizophrenia can be understood with reference to a range of comparative similarities and differences in Genetics, 'Environment', Phenomenology, Neuropsychology, Imaging and Neuropharmacology. The conditions share some of the genetic contribution and have similar complex multidimensional phenotypes, and overlapping symptoms of psychosis. Neuropsychological paradigms offer fresh insight into the links between symptomatology, elemental cognitive functions, and the underlying neural substrates of abnormal mental states. In the manic phase of bipolar disorder, verbal learning and sustained attention (the RVP) correctly classify 87% of manic subjects and 91% of subjects overall [1]. In the euthymic state only attentional performance was impaired after controlling for low levels of affective symptoms [2,3]. The effect was almost as large as in the acute group and was related to number of illness episodes. The CVLT was most impaired in patients with persisting affective, almost entirely depressive symptoms. In severe depression abnormalities of cognitive function are tightly coupled to prevailing mood, even when studied in a diurnal design. The salience of memory impairments is pervasive. Motor slowing and impairment of executive function is most definitively related to depressed states in which clinical retardation is prominent [4]. Chronic depression is associated with memory impairment and MRI abnormality in the hippocampus [5]. The central tenet of recovery in bipolar patients has already been challenged by the high incidence of occupational and psychological difficulties during remission. Impaired sustained attention may represent a trait marker for bipolar disorder, related to vulnerability to the disorder at a structural and/or neurochemical level. In unipolar depression poor outcome is usually related to residual depressive symptoms, and cognitive impairment. Impaired memory function is a state marker sensitive to mood elevation or depression.

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### S37

#### Causes of alcoholism

CH Laskaratos

NHS director, Psychiatric Hospital of Athens, Athens Greece

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Alcoholism is related to excessive drinking. Studying the causes of the latter is actually studying the causes of the former. There is always a multiplicity of causes of excessive drinking that must be seen both in cross-section of time and longitudinally. These are:

- A. Excessive drinking for the drug effect.
- B. Excessive drinking for psychodynamic reasons
- C. Excess drinking and environmental influences
- D. Failure in controls
- E. Genetic influences
- F. Excessive Drinking as a circular process
- G. Burnt out causes and experiences which lie dormant

What must be immediately apparent is that if the individual's drinking can result from such a variety and interplay of influences that the treatment approach should also be focusing to all the above

### S38

#### There are more than one types of alcoholism: type one and type two

G Mousas

Assistant NHS director, Department of Psychiatry, Sotiria Hospital, Athens Greece

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It is widely accepted that alcohol dependence (alcoholism) is one of the most common problems of public health, in the developed and developing countries. The extent of the problem reach up a 4–6% of the general population and it is estimated that 20–40% of all cases admitted to General hospital have a problem related to alcohol (abuse, dependence). Alcoholism is regarded, in the common perception, but also between experts, doctors and nurses, as a uniform disorder where a pathological relation to alcohol prevails, along with all the consequences and implications related to it. However, alcoholism is not a homogenous and uniform concept. There are very heterogeneous groups of patients with markedly different family histories, age of onset, alcohol-related aggressive behavior, and response to treatment. Many efforts have been made in the past, to divide alcoholic populations into more homogeneous groups. Among the recent efforts, there are clinical studies that demonstrate the existence of at least two distinct subgroups of alcoholism type one and type two. These distinguished characteristic types are based on clinical features and personality traits.

### S39

#### Alcoholism and dementia

I Liappas

Associate Professor of Psychiatry, Eginition Hospital, University of Athens, Greece

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Alcohol-induced dementia is a controversial disorder which entails global, persisting and disabling cognitive impairment resulting from and temporally related to prolonged, "heavy use" of ethanol. The qualifiers global, persisting and disabling bear mention. Recent thought on alcohol-induced dementia ranges from the contention that alcohol is just as common a cause of dementia as vascular

disorders to argument that alcohol-induced dementia cannot be accepted as an independent entity until its neuropathological basis has been established. DSM-IV invokes the term “alcohol, induced persisting dementia”, which is grouped with the other cognitive impairment disorders. Still, no specific inclusionary criteria are offered to distinguish alcohol dementia from other dementias. The most commonly reported findings in the brains of patients with long-standing “heavy alcohol use” is mild to moderate sulcal widening (especially of the frontal regions) as well as third and lateral ventricular enlargement as measured by imaging in post-mortem studies. Recent pathological studies have focused on neuronal loss in subcortical brain regions in an attempt to account for global cognitive impairment. Also MRI and PET studies provide some support for the association of alcohol abuse, cognitive impairment and frontal lobe pathology. A fascinating aspect is that with abstinence, the brain shrinkage is sometimes reversible. Much of the controversy surrounding alcohol-induced dementia (AD) has result in difficulties in differentiating it from Wernicke-Korsakoff syndrome (WKS). Patients with WKS showed some impairment of stance and gait. Polyneuropathy and nystagmus are also quite common symptoms. In the majority of alcohol misusers, cognitive deficits are subtle and tend to a large extent to be reversible with abstinence. A number of theories have been advanced to explain the mechanism by which “chronic alcohol abuse” might lead to dementia. Until a criterion standard for alcohol-induced dementia can be established through careful research, this reportedly common disorder will remain in doubt.

#### S40

##### **Alcoholism, marital problems and sexual dysfunction**

L Athanasiadis

Research Associate, 3rd University Department of Psychiatry, Aristotle University of Thessaloniki, Greece

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Alcohol produces psychological effects of expectation and pharmacological effects on sexual performance. In low doses it may have a disinhibiting effect and enhance sexuality, however in increasing doses it impairs arousal and ejaculation. In women the physiological changes are similar to those in men, however they may report a positive subjective effect. Alcoholism may severely damage relationships and sexuality in both sexes. Alcohol affects the hypothalamic-pituitary axis causing features of hypogonadism and low serum testosterone levels. The peripheral metabolism of testosterone and sex-steroid binding globulin is also affected. Other factors which may play a detrimental role on libido and sexual function are liver function abnormalities, higher serum oestrogen levels, associated polyneuropathy and interpersonal and marital problems. Alcoholism can have a wide range of disruptive effects on family systems. Major issues include financial and job related problems, marital discord, isolation from the community, emotional and medical problems, disruption of family rituals and sexual and physical abuse.

#### S41

##### **Treating alcoholism as an ongoing condition**

I Diacogiannis

Assistant Professor of Psychiatry, 3rd University Department of Psychiatry, Aristotle University of Thessaloniki, Greece

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The problem of alcoholism is as diverse as the types of persons suffering from it. We have to remember that alcoholism is likely to

be both a polymorphous illness and a chronic relapsing condition. Treatment of individuals dependent on alcohol involves two stages: detoxification and prevention of relapse. Many different drugs are used in the pharmacotherapy of alcoholism, depending on the stage of treatment as benzodiazepines, anticonvulsants alpha adrenergic agonists, beta adrenergic blockers for withdrawal and dopaminergic agents, cholinergic agents, GABA agents, anti-dipsotropic agents, glutamirergic agents, opiate antagonists and serotonergic agents for relapse prevention. In the same time individual, group and family psychotherapies are used for ongoing treatment of alcoholism.

#### S42

##### **Comorbidity: a common problem in consultation-liaison psychiatry**

A Iacovides

Associate Professor of Psychiatry, 3rd University Department of Psychiatry, Aristotle University of Thessaloniki, Greece

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Psychiatric and medical co morbidity is one of the most serious problems in general hospital patients and medico-surgical out patients in primary care settings. As many as 30–60% of general hospital inpatients have diagnosable psychiatric disorders. Many studies stressed that non-psychiatrists find it difficult to detect coexisting mental disorders, especially depression, personality disorders, organic mental disorders, etc. On the other hand, the medical staff frequently feels inadequacy in the understanding and confronting with behavioural reactions like noncompliance as well as with other situations, thus producing the concept of the “difficult patient”. The therapeutic team of C-L Psychiatry should register all relevant medical and psychiatric disorders and should rate the level of complexity of the case. According to the biopsychosocial approach the consultant can assist in altering the medical relationship to a dynamic interaction between patient – doctor in which family members and caregivers play a significant role. The core of interaction between referral doctor and consultant psychiatrist is the teaching procedure which is most effective when done at the bedside on case-by-case basis. Somatopsychic and psychosomatic approach, patient-doctor communication, medical psychology and psychosocial adjustment of the patient are most essential training issues. Recent trends concerning the practice of C-L Psychiatry such as the development of multidisciplinary teams, new subspecialties e.g psycho oncology, psychonephrology, etc. have reinforced the effort towards a more global biopsychosocial rehabilitation of the patient.

#### S43

##### **Diagnostic boundaries between schizophrenia and bipolar disorders: Implications for pharmacologic intervention**

V Alevizos

Associate Professor of Psychiatry, Eginition Hospital, University of Athens, Greece

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Schizophrenia and bipolar disorders share some genetic risk factors and are similar in several epidemiologic features. Some data in family and twin studies suggest hereditary overlap between the two disorders. Despite the availability of official diagnostic criteria, the diagnosis of bipolar disorder is still problematic. Both

nosologic entities describe psychotic disorders, have similar ages at onset and are lifelong conditions. A bipolar continuum theory supports the concept of a psychiatric continuum from unipolar to bipolar disorder and schizophrenia. The diagnosis of schizoaffective disorder, which falls between schizophrenia and bipolar disorders provides support for the continuum theory of these illnesses. However, there are clear clinical distinctions between these two nosological categories according to ICD-10 and DSM-IV and lithium therapy is effective in the majority of bipolar patients, whereas few patients with schizophrenia are helped. Regardless of whether bipolar disorders and schizophrenia are heterogenous, the most important clinical need is to find safe and effective treatments for these disorders. The similar abnormalities in neurotransmitter systems between bipolar disorders and schizophrenia may account for the efficacy of some newer atypical antipsychotics, such as olanzapine and risperidone in the treatment of patients with bipolar disorder. The antimanic effect of olanzapine and risperidone is attributed to blockade of dopamine D<sub>2</sub> receptors and antagonism of serotonin 5-HT<sub>2A</sub> receptors. Although these atypical antipsychotics were studied and marketed for the treatment of schizophrenia are now approved for the treatment of bipolar disorder. The biological similarities between the two disorders will help us in the understanding of bipolar disorder and the development of more effective treatment strategies. In clinical practice, the diagnostic separation of bipolar disorder from schizophrenia may be difficult, but it is important because of the availability of specific and effective treatments for each entity. Misdiagnosis can result in inappropriate prolonged use of antipsychotics, ineffective treatment with mood stabilizers, treatment failure and unwanted effects, while antidepressants may be associated with rapid cycling and a switch from depression to mania.

#### **S44** **Limitations of existing antipsychotic therapies**

R Tandon  
*Professor of Psychiatry, director, Schizophrenia Division,  
Department of Psychiatry, University of Michigan, US*

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The clinical profiles of atypical and conventional antipsychotics can be understood in terms of their different pharmacological profiles. All of the currently available effective therapies for treatment of schizophrenia affect dopaminergic transmission. The conventional antipsychotics are antagonists of D<sub>2</sub> receptors. Although effective for reduction of positive symptoms of schizophrenia, these agents have minimal effect on negative symptoms and may exacerbate them. In addition, nonselective dopamine blockade with these agents causes a variety of adverse effects, particularly extrapyramidal symptoms (EPS), tardive dyskinesia, prolactin elevation and related side-effects. The newer, atypical agents also have D<sub>2</sub> antagonistic properties, but are associated with significantly lower risk of EPS and tardive dyskinesia, and are more effective for reduction of negative symptoms than conventional antipsychotics. The exact pharmacologic basis for atypicality is a subject of debate, but involves activities at other receptors, particularly 5-HT<sub>2A</sub>, different binding kinetics to D<sub>2</sub> receptors, or the combination of the two. The atypical agents are, however, only partially effective in treating negative and cognitive symptoms; furthermore, they are associated with weight gain and metabolic changes, sedation, effects on cardiac conduction, etc. that may

ultimately have serious medical consequences as a result of increased risk for cardiovascular events and diabetes.

#### **S45** **New mechanisms of action for antipsychotic drugs**

J Csernansky  
*Gregory B. Couch Professor of Psychiatry, Washington  
University School of Medicine, St. Louis, MO, USA*

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Atypical antipsychotic drugs have now become the leading drug therapy for patients with schizophrenia and other related psychotic disorders. Atypical antipsychotic drugs differ from typical antipsychotic drugs in that they are both more effective, especially for negative symptoms and cognitive deficits, and better tolerated. Perhaps the first atypical antipsychotic drug was clozapine, whose mechanism of action is complex (i.e., antagonist action at various monoamine receptors, especially serotonin receptors), and remains under investigation. For several other atypical drugs, such as risperidone, olanzapine, quetiapine and ziprasidone, their atypical characteristics are attributed to blockade of serotonin (5-HT<sub>2A</sub>) receptors as well as dopamine (D<sub>2</sub>) receptors. Recently, aripiprazole was introduced into clinical use, and appears to have atypical properties as well. However, in the case of this drug, the atypical properties are attributed to its actions as a partial agonist at the dopamine (D<sub>2</sub>) receptor. Aripiprazole has several clinical advantages over other antipsychotic drugs including minimal metabolic as well as neurological side-effects. Further, aripiprazole's mechanism of action is unique among both typical and atypical antipsychotic drugs, which suggests that it should be the prototype for a new class of antipsychotic drug.

#### **S46** **Antipsychotic therapy: from meta-analysis experience to real-world clinical practice**

A Vidalis  
*Director of Psychiatric Department, Hippocratio General  
Hospital, Thessaloniki, Greece*

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It is well known that some algorithms recommend second-generation antipsychotics as first line treatment. Such recommendations are based on side-effect advantages and on efficacy differences between first-generation (FGAs) and second-generation antipsychotics (SGAs). Meta-analysis, which has been widely used in the medical ground over the last decade, is a valuable tool to combine results from several independent studies and, not only to draw conclusions or evidence about a controversial field, but also to serve as a process to solve disagreements among studies. Therefore, summarizing the data from randomized controlled trials and viewing it in a clinical framework seems to serve as a useful and effective framework-guide in the daily clinical practice. However, controversial results of systematic reviews and meta-analysis often offer nothing more than equivocate guidelines and usually leave clinicians to decide on their own about which of these results is the most appropriate for an optimal individualized clinical intervention and which is the least. Aripiprazole, a newly first dopamine D<sub>2</sub> receptor partial agonist, in a number of short-term trials has shown to significantly reduce the negative and positive symptoms of schizophrenia. Comparison of meta-analysis of mean change in plasma prolactin,

EPS, QTC prolongation and somnolence level of aripiprazole with haloperidol, risperidone and olanzapine ended in favor of aripiprazole. We are going to review clinicians' data from clinical trials on the efficacy and tolerability of the newer antipsychotics. Clinicians can incorporate such data in their real-world clinical practice for an effective and quality strategic treatment approach.

#### S47

##### **Can neuroimaging improve the diagnosis and treatment of schizophrenia?**

J Csernansky

*Gregory B. Couch Professor of Psychiatry, Washington University School of Medicine, St. Louis, MO, USA*

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Theories of the pathophysiology of schizophrenia suggest that the pathogenesis of the disorder involves irregularities of neurodevelopment that result in distinctive neuroanatomical abnormalities. Among the brain structures involved in such abnormalities are the hippocampus and other components of the limbic system. Because such abnormalities are present before psychotic symptoms develop in patients with schizophrenia, their detection and characterization may be a useful tool for clinicians that are attempting to confirm the psychiatric diagnosis. In an attempt to enrich the types and quality of neuroanatomical information that can be derived from magnetic resonance images, we have recently applied the tools of computational anatomy to the study of selected brain structures in schizophrenia. The shape and symmetry, as well as the volume, of brain structures can be precisely quantified by using such methods. Further, the results of our studies indicate that schizophrenia patients have distinctive abnormalities of the shape and symmetry of the hippocampus and thalamus as compared to controls matched for age, gender and parental socioeconomic status. Also, our results suggest that there is biological heterogeneity among patients with schizophrenia in that some patients can be distinguished from others because they have more distinctive abnormalities of shape in one of these brain areas or the other. The aim of future research will be to add information about additional brain areas to further improve the sensitivity and specificity of neuroanatomical analysis as a potential tool for diagnosis.

#### S48

##### **Temperament: the bridge between biology and affective illness**

H Akiskal

*Professor of Psychiatry, Mood Disorders Center, University of California at San Diego, V.A. Medical Center San Diego, USA*

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Kraepelin had envisaged a broad concept of manic-depressive illness that included recurrent depressions. The unipolar-bipolar dichotomy restricted the territory of manic-depression to strictly defined bipolar disorder with mania (bipolar I). Research over the past three decades has shown that bipolarity extends into the severe psychotic domain, as well as into the interface between bipolarity and unipolarity. At the severe end of the spectrum, familial-genetic and course parameters support the extension of bipolar disorder into "schizo-bipolar." At the "softer end," bipolar II is distinguished from bipolar I by excited periods which are non-psychotic and brief, and sometimes adaptive, hypomania as short as two days; in bipolar III, hypomania is associated with antidepressant

treatment; in bipolar IV, the depression arises from a hyperthymic (trait subthreshold hypomanic) baseline. More recent data on the near normal distribution of hypomanic overactive behavior in bipolar II and unipolar patients is further evidence for the crumbling of boundaries between unipolar and bipolar disorders. The clinical and familial data in support for extending the bipolar spectrum has come from U.S. and European centers and community studies, and argues for oligogenic inheritance. However, the broadened clinical spectrum does not necessarily imply genetic homogeneity. The high population prevalence of bipolarity at the softer end of the spectrum (5–10%) argues for a role of bipolar traits such as cyclothymia and hyperthymia in human evolution (e.g. mate selection, territoriality, leadership, exploration, creativity). Finally, the broad spectrum has important therapeutic and public health significance in terms of early intervention and extending the benefit of mood stabilizers to conditions that might otherwise be diagnosed "unipolar" or "impulse control disorders."

#### S49

##### **Genetic factors contributing to bipolar illness**

G Papadimitriou

*Associate Professor of Psychiatry, Eginition Hospital, University of Athens, Greece*

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There is strong evidence from family, twin and adoption studies that heredity plays a major role in the pathogenesis of affective disorders. Family studies have verified previous empirical observations concerning the familial aggregation of affective illness by showing that affective and affective spectrum disorders are more frequently expressed in the relatives of affected individuals, than in the relatives of individuals from the general population. This elevated morbidity risk is even more higher in the case of early illness onset and comorbidity with other psychiatric disorders. Twin studies have added strong evidence for genetic influence in the expression of affective disorders with significantly higher concordance rates of the disease, mainly bipolar, in monozygotic than in dizygotic twin pairs (70% vs 20%), reared together or apart. The fact that concordance rates in monozygotic twins is less than 100% emphasises also the role of environmental factors in the manifestation of the disease. Adoption studies have demonstrated a significantly higher incidence of affective disorders among the biological relatives of affected adoptees, than either among their adoptive relatives of the biological relatives of non-affected adoptees. The results from genetic association and linkage studies, as well as from genome-wide scan studies have shown several susceptibility loci through the genome, but specific gene(s) for the vulnerability of the disease have not as yet definitively identified, due to the apparently non-mendelian mode of transmission of these disorders and the assumed complexity of their expression.

#### S50

##### **Treatment of bipolar disorder part I: a critical review of treatment guidelines. Where do we stand?**

KN Fountoulakis

*Lecturer in Psychiatry, 3rd University Department of Psychiatry Aristotle University of Thessaloniki, Greece*

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**Background:** Bipolar disorder is a common mental disorder. Type I and type II have a prevalence rate of up to 3.7% and both

are disabling conditions. Their aims to the resolution of symptoms, restoration of psychosocial functioning and prevention of relapse. The development of treatment guidelines emerged as an important element so as to standardize treatment and to provide clinicians with algorithms, which would be able to carry research findings to the everyday clinical practice.

**Materials and methods:** The MEDLINE was searched with the combination of each one of the key words 'mania', 'manic', 'bipolar', 'manic-depression', 'manic-depressive' with 'treatment guidelines'.

**Results:** The search was updated until October 1st, 2003 and returned 204 articles. The review process based on the titles and abstracts selected 84 of them as relevant to include in the current study. Among them there were 26 papers concerning structured treatment algorithms proposed by official panels.

**Discussion:** The American Psychiatric Association and the Texas Consensus Conference Panel on Medication Treatment of Bipolar Disorder are the most up-to date guidelines. The core proposal of these guidelines is that all bipolar patients should receive continuous treatment with an antimanic agent with an intermittent use of antidepressants. At the first stage of the mania/hypomania algorithm, monotherapy with lithium, divalproex sodium or olanzapine is recommended. At latter stages combination therapy is strongly recommended. It is clearly stated that in bipolar depression antidepressants should be used only in combination with antimanic agents in order to avoid switching of phases. During the maintenance phase all patients should receive antimanic agents, while some will need the addition of antidepressants.

**Conclusion:** The more recent guidelines point the value of atypical antipsychotics and particularly of olanzapine in the treatment of bipolar disorder as equal to that of mood stabilizers.

## S51

### Treatment of bipolar disorder part II: beyond guidelines, the science and the art of combining medication and psychoeducation in bipolar disorders

E Vieta

*Professor of Psychiatry, Director of Research, Clinical Institute of Psychiatry and Psychology, Director of the Bipolar Disorders Program, Hospital Clinic, University of Barcelona, Spain*

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Although genetic and biological factors are crucial in the pathophysiology of bipolar disorder, the importance of psychosocial factors in triggering or mitigating relapses warrants the implementation of psychotherapeutic interventions. Furthermore, although medication is crucial for the long-term outcome of bipolar illness, poor adherence remains a big problem in the management of the disease. Psychoanalysis, psychoeducation, group therapy, family therapy, cognitive-behavioral therapy, social rhythm and interpersonal therapy have been used in the long-term treatment of bipolar patients. To date, none have established efficacy on their own in controlled clinical trials regarding hospitalization, recurrences or suicidal behavior, as medication alone does. However, psychoeducation combined with several cognitive-behavioral techniques, either in group or individually, have started to yield the first positive results in high standard, controlled trials on the combination of medication plus psychosocial intervention versus medication alone. These approaches focus primarily on information, treatment compliance,

early detection of relapse, and illness management skills. They basically reinforce treatment alliance between the patient and the treating team, and provide a sense that everybody – the patient, the psychiatrists, the psychologists, nurses and social workers – make their efforts to improve the outcome of the disorder and the well-being of the patient, beyond what medication alone can do.

## S52

### Psychoanalytic psychotherapy of psychosis

S Berati

*Professor of Psychiatry, Child Psychiatry and Psychoanalysis, Department of Psychiatry, University of Patras, Greece*

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According to the psychoanalytic theory, psychosis consists in the disruption of the patient's relationship with the world of objects and subsequently in his attempt to re-organize this defective relationship capacity. Mechanisms involved are regression to a narcissistic objectless state, while at the same time, mainly through projection, the individual tries to restore the chaos he feels intrapsychically. A concept proposed by certain psychoanalysts is the concept of neutralization of the instinctual energy of the sexual and the aggressive drives. Neutralization provides the ego with energy which can be utilized for the development of ego and superego functions. When an individual becomes psychotic this energy becomes de-neutralized, disrupting ego and superego functions, such as reality testing, object relationships, thinking, affect, capacity for attention etc. Emphasis has been given to the importance of the mother-child relationship early in life for the development of a strong ego serving good adjustment through the various stages of development. When various pathological conditions lead to a defective ego, the individual is in a vulnerable position to manifest psychotic symptoms, especially when a genetic predisposition is present. Psychoanalytic psychotherapy of psychosis is a very difficult and time-consuming process. Its goal is to correct as much as possible the defective ego of the patient. Interpretations are useful in helping the patient understand and gain control over his symptomatology, but what remains of central importance is the therapist-patient relationship in which the therapist functions as an auxiliary ego and as benevolent care-taker.

## S53

### Balance dysfunction in childhood anxiety: findings and theoretical approach

M Mintz

*Professor, Department of Psychology, Tel Aviv University, Israel*

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Comorbidity of balance and anxiety disorders was frequently reported in adult subjects. We tested the presence of such comorbidity in children. Children with diagnosis of generalized anxiety disorder reported a high incidence of dizziness and vertigo, experienced elevated sensitivity to balance challenging situations during neurological testing, and performed poorly on balance-challenging physical exercises, relative to control children. Similarly, children referred to child development clinic due to balance disturbances reported increased anxiety level on fear surveys, relative to controls. These findings support the presence of balance-anxiety comorbidity in children. Although there is some agreement that the two disorders are causally related, there is no

consensus concerning the direction of the causality. We reason for primacy of the of the balance disorder, predicting that treatment of balance may ameliorate the associated anxiety. A sample of children with demonstrated balance-anxiety comorbidity participated in structured occupational therapy balance treatment program based on the sensory-motor integration protocols. After 12 treatment sessions, improvement in balance performance correlated with major alleviation of anxiety, as tested by self-report and parent-report scales. We ground these findings in the extended version of the 'two-factor theory of learning'. This theory predicts that confrontation with balance challenging events first invokes a stage of fear conditioning followed by a stage of adaptive motor-conditioning. A third stage follows when the acquired motor responses provide a reliable solution for balance threatening events and consequently promote extinction of the fear-responses. The clinical implications are that children with normal acquisition of fear responses but with poorly acquired motor-balance responses are prone to retain the conditioned anxieties, i.e., they do not reach a third stage of learning. Intensive balance treatment seems to advance these children to the third stage of fear extinction.

#### S54

##### **Controversies in the etiology-diagnosis of chronic insomnia: new insight from neurobiology findings**

A Vgontzas

*Professor of Psychiatry, Penn-State University, Pennsylvania, USA*

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Insomnia is the most prevalent sleep disorder and is associated with significant morbidity and healthcare cost. It is frequently a result of mental and medical disorders, and is a risk factor for depression, hypertension, and other diseases. Thus, its proper diagnosis and treatment is of importance to medicine and psychiatry. In this presentation, we will address four longstanding central questions in the etiology-diagnosis of chronic insomnia. First, is chronic insomnia a disorder of sleep loss or a disorder of physiologic and emotional hyperarousal? Second, is there a physiological vulnerability in addition to the psychological one in developing chronic insomnia? Third, is the underlying pathophysiology of chronic insomnia associated with depression, similar or different than that of depression? Fourth, is polysomnography and, in general, objective measures of sleep, useful in the diagnosis of chronic insomnia? Our thesis on these four questions will be presented based on an integration of previously published clinical and epidemiologic research and new neurobiology findings from the Hershey group and others.

#### S55

##### **The development of psychoanalytic psychotherapy during the last century**

G Esagian

*Member of the European Association of Psychoanalytic Psychotherapy*

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On the present work, the process of the freudian cogitation is getting firstly impressed, towards the creation of the psychoanalytic therapeutic setting. That is characterized from the fundamental discovery of the unconscious and from the focalization of the psychoanalyst interest, on the endopsychic fermentation,

independently from biological and environmental factors. On the following, there is a reference on the brief psychotherapies of psychoanalytic inspiration, which are interested mostly on the therapeutic results of psychoanalysis. Thereby, on our point of view, the psychoanalytic therapy enters to the field of psychiatry therapeutic and the preconditions for research and appreciation of the therapeutic results are created. Finally there is a reference on the methodological and scientifically matters of research in psychoanalysis, through the presence of two ascendant tendencies on the in question field, of the francophone and of the anglo-saxon.

#### S56

##### **Psychophysiological indices in psychotherapy research**

A Rabavilas<sup>1</sup>, C Papageorgiou<sup>2</sup>

<sup>1</sup>*Professor of Psychiatry, Eginition Hospital, University of Athens, Greece;* <sup>2</sup>*Assistant Professor of Psychiatry, Eginition Hospital, University of Athens, Greece*

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Psychophysiology has been traditionally defined as the scientific discipline that studies the relationship of physiological and psychological variables. Therefore, it is not surprising that research into psychological changes related to psychotherapeutic interventions has been conducted through a variety of psychophysiological methods over the last 50 years. Psychotherapeutic approaches as diverse as psychodynamically oriented psychotherapy, behaviour modification, cognitive therapy, biofeedback and autogenic trainings, progressive relaxation or even hypnosis, have all been investigated in conjunction with some form of psychophysiological assessment. A number of studies, even since the mid-1950s, utilizing mostly peripheral psychophysiological measures have investigated the process of psychotherapy. Concepts derived from the insight-oriented psychotherapy, such as empathy, conflict and transference-countertransference exchanges or processes related to learning theory, such as acquisition, habituation or extinction, identified as essential ingredients of a psychotherapeutic setting have been investigated in relation to either individual responding, or as a function of interpersonal interaction. In the mid-1970s the psychophysiological approach to psychotherapy concentrated on multiple physiological assessments across various response systems (subjective, cognitive, behavioural, verbal etc), a trend that led to considerable conceptual developments, in spite of the fact that the measures employed concerned almost exclusively autonomic responses. An interesting contribution to psychotherapy research, during that period, stems from the so-called Social Psychophysiology. A number of studies concerning aspects of dyadic communication, such as expressed emotions in family settings, non-verbal interactions, EMG-assisted facial expression of emotions etc, added to our knowledge of the processes involved in the interpersonal communication. Finally, over the last decade, psychophysiological assessment incorporated the technological facilities provided by the development of imaging techniques, such as integrated ERPs, PET, SPECT and fMRI, although the findings thus far are not conclusive. The interpretation of psychophysiological data in psychotherapy research is confounded by the following factors: (a) the earlier psychophysiological findings concerned mostly single, as well as peripheral variables, (b) the more recent findings based on novel technologies are preliminary and require replication, (c) there is still need to examine patterns

of physiological responses rather than magnitudes or latencies, (d) the “specificity” of psychophysiological responses should be clarified through consistent correlational studies with the data stemming from other biological disciplines and (e) a psychotherapy session is by definition a highly uncontrolled situation in laboratory terms. However, psychophysiology still consists a part of clinical neuroscience and in the light of recent brain research (indicating that the boundaries between psychological theories, as well as between biological disciplines have become less distinct), its contribution to the biopsychosocial orientation of current psychotherapy research could be valuable.

### **S57 Psychoanalytic understanding of drug therapy in schizophrenia**

I Ierodiakonou-Benou

Lecturer in Psychiatry, 3rd University Department of Psychiatry, Aristotle University of Thessaloniki, Greece

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Psychoanalytic psychotherapy – a traditionally talking cure – has been considered as a therapeutic approach for psychoses with poor outcome due to the psychoses’ biological rather than psychological base. Nevertheless psychoanalytic understanding offers a framework of relating to psychotic patients in a way that helps them to make sense of their experiences. Clinical material is presented where a setting is described to illustrate the application of analytic thinking to psychotic patients concentrating on the use of the drug therapy, and the transference and counter transference issues arising around the use of medication. It is argued that psychoanalytic thinking provides the framework to help the individual, their relatives and the professions staff in making sense of psychoses in order for the treatment to be complete.

### **S58 Psychotherapeutic approach of developmental disorders in childhood and adolescence**

N Zilikis

Assistant Professor of Psychiatry, 3rd University Department of Psychiatry, Aristotle University of Thessaloniki, Greece

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Development leading to final psychic organisation and personality structure is a highly complex process involving individual genetic and other biological characteristics in their interaction with environmental factors (family, social and cultural context). Therefore, simplistic approaches ignoring the multi-factorial nature of both normal development and pathological conditions, lead more to ideologies priming one among the different “theories” rather than to a scientific consideration of complex clinical phenomena and situations. However, the tendency to an excessive re-medicalisation of psychiatry carries the risk of ignoring the essential part psychodynamic and psychosocial approaches play in both the understanding and treatment of pathology in childhood and adolescence. Approaches which historically played a prominent role in the development of Child and Adolescent Psychiatry. Some of the major clinical conditions of this age group are taken as illustrating examples in supporting the irreplaceable role of psychodynamic and psychotherapeutic components in clinical work.

### **S59 Behavioural therapy, dementia management and brain revitalization**

N Degleris

Psychotherapeutic Center of Piraeus, Greece

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Behavioral therapy, as applied to demented patients and their environment (families, care-givers, health care providers) has given birth to a variety of intervention strategies whereby principles of behavior control and cognitive modification are approaching the assessment, prevention, management, treatment and rehabilitation of the patients. The theoretical background is based mainly on researches of the autonomic nervous system operant conditioning and on the psycho-biological components of the stress response. The holistic intervention to dementia dysfunction aims to improve the quality of life of the patients and their families by emphasizing the value of their reminiscences to old and young through pioneering artistic, educational and welfare group activities. Relevant neuro-imaging and neuro-biological indicators of brain revitalization advocate strongly encouraging evidences as well.

### **S60 Brain (encephalos) in the writings of Aristotle, the Macedonian philosopher**

CH Ierodiakonou

Professor Emeritus of Psychiatry, Aristotle University of Thessaloniki, Greece

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Aristotle’s concept of the soul-body entity is astonishingly similar to today’s psychosomatic approach in medicine. His consistently expressed view that “the soul is within the body and cannot exist without it”, as well as his conviction that the mental functions manifest themselves through the body demonstrate such an approach. In spite of that, brain as a bodily organ is not considered by the taking part in those processes, but only as “the coldest of all organs keeping the blood’s temperature mild”. The anatomical description of the brain hemispheres with the surrounding meninges, vessels and skull is for the most part correct and the terminology almost identical with today’s Greek medical terms. His physiological theories nevertheless, follow the ancient views of the importance of “hot-cold”, “moist-dry” etc and of the role of evaporations (“anathymiasis”). The arguments about the substances out of which the brain is composed are very interesting. Mind (“nous”) in Aristotle’s writings is extensively elaborated on, with many subdivisions, and the term is mostly used to point to the function of thought, is never connected to the brain as a bodily organ. The philosopher’s inquisitive tendency, though, in his work “On the soul” (“De anima”) leaves no doubt that he always searching for the “one (organ)” which is responsible for the co-ordination of all mental functions, especially judgement.

### **S61 Physiological conditions in chronic schizophrenic patients in relapse on emergency admission**

G Karahalios, P Valavanis, P Scordeli, S Choidas

“Dromokaition” Mental Hospital, Psychiatric acute admission ward “Agia Markella”, Greece

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**Background:** The purpose of our study was to investigate the varieties, incidence and differences of abnormal physiological

**Table 1: Laboratory values in chronic schizophrenic patients in relapse at emergency admission**

	<b>Hypernatremia (Na<sup>+</sup> &gt;147 mEq/l)</b>	<b>Hb &gt;15.1 g/dl</b>	<b>Total protein &gt;8.3 g/dl</b>	<b>BUN &gt;22 mg/dl</b>	<b>Hypokaliemia (K<sup>+</sup> &lt;3.6mEq/l)</b>	<b>Leukocytosis (WBC &gt;10,300)</b>
Group A (positive symptoms)	8.69%*	39.13%*	21.7%	21.7%*	21.73%*	17.39%*
Group B (negative symptoms)	0%*	6.66%*	6.66%*	6.66%*	13.33%*	6.66%*

\*p&lt;0.001

conditions in chronic schizophrenic patients with prominent positive and negative symptoms in relapse.

**Materials and Methods:** Laboratory data (Na<sup>+</sup>, K<sup>+</sup>, complete blood count, BUN, total protein, SGOT, SGPT) obtained prior to treatment from 76 patients (62 male, 14 female, mean age 36.44 ± 2.29) who were admitted involuntarily in acute psychiatric admission ward "Agia Markella", during a 6 month period (June 2002 to December 2002) were evaluated.

All the patients were diagnosed as suffering from chronic schizophrenia, according to DSM-IV criteria without other concurrent psychiatric or somatic disorders.

After evaluation of psychopathology symptoms using the PANSS scale, patients were classified in Group A (46 patients, 38 male, 8 female) with prominent positive symptoms and Group B (30 patients, 24 male, 6 female) with prominent negative symptoms. Statistical evaluation was performed using chi-square test and t-test.

**Results:** Group A patients presented statistically significant higher frequency of dehydration, hypokaliemia and leukocytosis as illustrated in Table 1. Assessment of dehydration was based on laboratory values.

**Discussion:** Chronic schizophrenic patients in relapse that require involuntary admission frequently present problems regarding their physical condition. Patients with prominent positive symptoms tend to present with greater degree of abnormalities as dehydration, hypokaliemia and leukocytosis. This is mainly due to physical exhaustion, psychotic excitement, agitation and decrease of water and food intake.

Relevant studies from international literature support our findings and suggest that our drug related therapeutic interventions, should be very cautious and under close surveillance, in order to avoid adverse effects due to drug related pharmacokinetic abnormalities.

## S62

### **ECT and heart rate changes: an alternative to EEG monitoring for seizure confirmation during modified ECT**

BN Jagadisha Gangadhar, RD Ranganath, VS Candade, KR Hemalatha

Department of Psychiatry, National Institute of Mental Health And Neuro Sciences, Bangalore, India and Niviqure Meditech Private Limited, Bangalore, India

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**Background:** Detection of occurrence of adequate seizure is difficult in modified ECT, because of muscle relaxation. "Cuff method", can sometimes miss a seizure of adequate duration as measured by EEG.

**Aim:** To examine if increase in heart rate can be an additional guide to detect adequate cerebral seizures.

**Material and Methods:** Heart rates before and following the stimulus were estimated in 100 ECT sessions of two groups vs., adequate EEG seizure duration ≥25 seconds; n=60) and inadequate (EEG seizure duration <25 seconds; n=40) EEG seizures. The peak heart rate, the ratio of peak to the baseline heart rate (normalized peak heart rate) and time required to reach peak heart rate were found for each of these recordings and the two groups were compared.

**Results:** The group with adequate EEG seizure had significantly higher peak heart rate, higher peak to baseline heart rate ratio and longer time to reach peak heart rate. In 98.5% of sessions with adequate seizures and only in 5% of sessions with inadequate seizures the normalized peak heart rate was more than a cut-off of 1.18. In all sessions with adequate seizures heart rate reached the peak value after 7 seconds; only in one of the sessions with inadequate seizures (2.5%) it reached peak value after 7 seconds. A combination of time-to-peak of 7 seconds and normalized peak heart rate of 1.18 could segregate all sessions with adequate seizures from sessions with inadequate seizures.

**Discussion:** The time required to reach the peak heart rate along with normalized peak heart rate in that order can be additional measures to detect adequate seizure during modified ECT.

## S63

### **Post-seizure EEG fractal dimension and spectral power predict antidepressant response to unilateral ECT**

BN Jagadisha Gangadhar, N Janakiramaiah, K Girish, AG Ramakrishnan

Department of Psychiatry, National Institute of Mental Health and Neuro Sciences, and Indian Institute of Science, Bangalore, India

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**Background:** Measures of EEG during ECT, for example, higher ictal amplitude and higher post-seizure EEG suppression have predicted antidepressant response. The earlier studies on this subject used bilateral ECT and had used spectral power to analyze EEG. This study aims to examine if this finding holds good even for unilateral ECT, using both fractal dimension and spectral power to analyze the EEG. The objective of the study was to determine measures of EEG seizure in unilateral ECT, which can predict response.

**Material and Methods:** Fifty-one right-handed, drug-free major depressive disorder patients received thrice weekly right unilateral ECTs at 2.5 times their seizure threshold. A rater blind to the clinical data measured fractal dimension and spectral power of early- mid- and post-seizure EEG, recorded from bilateral frontal and temporal areas (F3, F4, T3, T4) during their second ECT. Depression was rated using Hamilton's Rating Scale for Depression at baseline and on the 3<sup>rd</sup>, 7<sup>th</sup> and 14<sup>th</sup> days following ECT.

**Results:** Good quality EEG recordings were analyzed from 35 patients. These patients were not different from the rest in socio-demographic, clinical and outcome variables. Seventeen of this 35 patients reached criteria for early response of more than median percent improvement on HRSD on both 7<sup>th</sup> and 14<sup>th</sup> day. Univariate analysis showed significantly smaller fractal dimension ( $p=0.038$ ) and spectral power ( $p=0.04$ ), suggesting greater post-seizure EEG suppression in early responders compared to the late responders. This was particularly so in the left frontal area. Early responders had significantly lower right/left ratio of mid-seizure fractal dimension compared to late responders, suggesting more symmetrical ictal EEG. Multivariate discriminant function analysis confirmed the findings of the univariate analysis. None of the other clinical, treatment or EEG parameters predicted early response.

**Discussion:** Effective seizure during right unilateral ECT may be characterized by high post-seizure EEG suppression particularly in the left frontal area and more symmetrical seizure activity.

### S64 Neuropsychological profile of children with mitochondrial disorders

L Varvogli<sup>1,2</sup>, S Waisbren<sup>3</sup>

<sup>1</sup>Teaches Psychophysiology and Current Issues of Neurosciences (ΔΑ 407/80) Panteio University of Athens, Greece; <sup>2</sup>Division of Genetics, Department of Medicine, Children's Hospital, Harvard Medical School, Boston, USA; <sup>3</sup>Department of Psychiatry, Harvard Medical School, Boston, USA

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**Background:** To describe the neuropsychological profile of children with mitochondrial disorders (myopathies and encephalomyopathies), according to the following questions: (a) do children diagnosed through distinctive clinical symptoms have the same neuropsychological profile as children diagnosed through genetic, histologic, radiologic, or biochemical testing? (b) is there a typical cognitive profile for the mitochondrial disorders in general? (c) is there a typical social/emotional/behavioral profile for the mitochondrial disorders in general? (d) do younger children have a neuropsychological profile that differs from that of older children?

**Method:** Comparable neuropsychological tests were used for children of different ages, including scales of adaptive behavior, behavioral questionnaires and measures of language, academic, and developmental and cognitive skills. Fifty-seven children, (6–18 years) were assessed. The results were analyzed using SYSTAT programs.

**Results:** (a) the groups of children diagnosed through different methods had the same neuropsychological profile, (b) characterized by severe deficits in verbal and nonverbal skills, as well as reduced functional skills. Severe mental retardation characterizes over 50% of this sample. (c) There are behavioral and emotional difficulties of anxiety and attention deficit. (d) Younger children had better neuropsychological functioning than older ones.

**Discussion:** Mitochondrial disorders are associated primarily with sensory-motor difficulties, including gross and fine motor, speech, vision, and hearing difficulties, with compromised developmental and/or cognitive skills. Comprehension, social awareness and reasoning tend to be spared.

### S65

#### Behavioural and emotional profile of children with galactosemia: comparative study with children with PKU

L Varvogli<sup>1,2</sup>, S Waisbren<sup>3</sup>

<sup>1</sup>Teaches Psychophysiology and Current Issues of Neurosciences (ITΔ 407/80) Panteio University of Athens, Greece; <sup>2</sup>Division of Genetics, Department of Medicine, Children's Hospital, Harvard Medical School, Boston, USA; <sup>3</sup>Department of Psychiatry, Harvard Medical School, Boston, USA

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**Objective:** To describe the behavioral and emotional profile of children with galactosemia, an inborn error of metabolism. A group of children with phenylketonuria (PKU) was used for comparison. A formal psychological evaluation was conducted for all the children participating in the study. The parents completed two questionnaires, describing the behaviors and emotions of their children. There were three major questions in this study: (a) do children with galactosemia have more behavioral and emotional problems? (b) do they have more intelligence or learning difficulties? (c) which is their profile in these characteristics compared to children with PKU?

**Material and Methods:** A retrospective research was designed, using the psychological test protocols of 13 children with galactosemia and 28 with PKU, who were followed in the Inborn Errors of Metabolism Clinic of Children's Hospital, Harvard Medical School. The test protocols included formal assessment of the developmental level or IQ of the child, using standardized tests, as well as behavioral/emotional questionnaires completed by the parents. The results were analyzed using ANOVA.

**Results:** Children with galactosemia had IQ below the normal range, as compared to same-aged peers (from the test's standardization sample) as well as compared to children with PKU. Children with galactosemia showed difficulty in 7 out of the 17 measures of behavior from the 2 questionnaires.

**Discussion:** The results of this study show a degree of mental deficiency and the existence of a behavioral/emotional profile that seems to be related specifically to the diagnosis of galactosemia.

### S66

#### Vasopressin neurons of the supraoptic nucleus are not activated in schizophrenia: an immunocytochemical and in situ hybridization study

Y Malidelis<sup>1,2</sup>, D Kontostavlaki<sup>1,2</sup>, U Unmehopa<sup>3</sup>, J van Heerikhuizen<sup>3</sup>, M Panayotacopoulou<sup>1,2</sup>, D Swaab<sup>3</sup>

<sup>1</sup>Department of Psychiatry, University of Athens Greece; <sup>2</sup>University Mental Health Research Institute, Athens, Greece; <sup>3</sup>Netherlands Institute for Brain Research, Amsterdam, The Netherlands

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**Background:** Dysfunction in water intake and metabolism was reported in schizophrenia by many authors. Polydipsia, hyponatremia and water intoxication are enduring problems for a proportion of chronic inpatients. Water load tests suggested abnormal regulation of the activity of vasopressin (AVP)-synthesizing neurons in schizophrenia.

**Material and Methods:** In order to investigate the above hypothesis we studied the activity of the dorsolateral supraoptic

nucleus (dl-SON) in the postmortem hypothalamus of 9 schizophrenic patients and 9 matched controls using immunohistochemistry and in situ hybridization histochemistry. For the available sample of schizophrenic patients, no information regarding polydipsia or hyponatremia was found in their medical case reports. The neuronal activity markers studied were: cell size, size of Golgi apparatus and expression of AVP mRNA followed by morphometric quantitative evaluation and statistical analysis using the Mann-Whitney non-parametric U-test. We also estimated the expression of tyrosine hydroxylase (TH) protein and mRNA since our previous studies showed increased TH-immunoreactivity in magnocellular AVP-synthesizing neurons of the human hypothalamus under clinical conditions of prolonged osmotic or nonosmotic stimulation.

**Results:** In our sample, no significant differences were observed in any of the neuronal activity markers between schizophrenic patients and controls. A strong positive correlation was found between TH mRNA and AVP mRNA expression –both markers of neurosecretory activity- when all the cases were pooled together.

**Discussion:** Schizophrenia per se does not appear to increase the activity of magnocellular AVP-synthesizing neurons in the dl-SON of the material studied. Since our sample did not include documented polydipsic or hyponatremic cases, further investigation is needed to evaluate the above mentioned neuronal activity markers in this subgroup of schizophrenic patients. Brain material was obtained from the Netherlands Brain Bank (coordinator Dr. R. Ravid).

## S67

### Developmental risk: evidence from large non right-handed samples

F Vlachos<sup>1</sup>, F Gaillard<sup>2</sup>, K Vaitis<sup>1</sup>, A Karapetsas<sup>1</sup>  
<sup>1</sup>University of Thessaly, Greece; <sup>2</sup>Lausanne University, Switzerland

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**Background:** The present study aimed to reveal developmental and sex related lateralization effects on a task of visual-spatial abilities, thanks to the collect of data from large non right-handed samples. Non lateralized schoolchildren are not only backwards in maturation but also lack this advantage left- and righthanders have in their learning. This is why we can consider non lateralized schoolchildren as at risk of finding themselves in the “slow learners” if not in the “learning disabled” group, as far as visual-spatial abilities are concerned. In this sense, they are subjected to a true developmental risk.

**Material and Method:** A special recruitment procedure provided norms of the Rey Osterrieth Complex Figure' copy (ROCF) from large samples of lefthanded (n=420) and ambidextrous (n=72) compared to righthanded (n=420) schoolchildren as well as to adults (n=545). This graphic task was considered as reflecting the growth of visual-spatial intelligence and impairment at copying as the developmental risk. Subjects' hand preference was assessed by the Edinburgh Handedness Inventory.

**Results:** Analysis indicated that: (1) The trend towards consistent right-handedness is sex-related. Girls are clearly ahead of boys in this lateralization process and boys are over-represented in ambidextrous subjects. This greater prevalence of ambidextrous boys compared to girls decreases with age. (2) Performance on drawing the ROCF varies according to age and handedness groups. Ambidextrous subjects scored worse in all age groups.

**Discussion:** Non right-handedness should not be considered as a risk for cognitive development per se, but rarity of this condition makes it more likely to count in pathological cases.

## S68

### Complex writing systems may entail distinct profiles of brain activation.

#### A magnetoencephalography study

CE Valaki, F Maestu, P Simos, H Ishibashi, A Fernández, C Amo, T Ortiz

Centro de Magnetoencefalografía Dr. Perez Modrego, Universidad Complutense, Madrid, Spain; Dept. of Methodology, History and Theory of Science, Cognitive Science Div., University of Athens, Greece; Vivian Smith Center for Neurologic Research, Dept. of Neurosurgery, University of Texas-Houston, USA

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**Background:** Receptive language-specific cortical maps have been repeatedly verified through normative and clinical Magnetoencephalography (MEG) studies. However, different writing systems may entail distinct neuro-anatomical substrates, hence different brain activation patterns for reading the various types of script. MEG, the most recent of the functional brain imaging techniques, allows mapping of task-specific changes in neurophysiological activity in real time. The project presented here is an attempt to describe the brain mechanisms mediating printed word recognition in languages with complex writing systems, such as Japanese. The multiplicity of orthographic systems has serious consequences on the level of difficulty in learning, producing and comprehending each type of script. The present MEG study addressed the question as to whether the Japanese mixed logographic (Kanji) and phonetic (kana) writing system is associated with distinct brain activation profiles, as compared to the basic Indo-European alphabetic writing systems.

**Methods and analysis:** Ten normal native Japanese speakers without any history of neurologic or psychiatric disorder participated in this study. Language-specific brain activity was elicited using three single-word recognition conditions (Kanji, Hiragana and Katakana). In each task a list of printed word stimuli were arranged in blocks of target and distractor words. The subjects were instructed to lift their right index finger whenever they recognized a target word. MEG recordings were made with a whole-head MEG system equipped with magnetometer sensors (Magnes 2500, 4D Neuroimaging, Inc., San Diego, CA). The signal was filtered online and then subjected to the adaptive filtering procedure (4D Neuroimaging signal analysis package). The intracranial generators of the ERFs were modeled as single ECDs and fitted by using nonlinear Levenberg-Marquardt algorithm. The ECD computation was restricted to latency periods during which a single pair of magnetic flux extremes dominated the left and /or right half of the head surface. All participants underwent a T1-weighted MRI scan in order to determine the anatomical regions of the brain corresponding to each activity source.

**Results:** All participants showed activity sources in: (1) temporoparietal cortex, including the posterior part of the superior temporal gyrus, extending into the adjacent supra-marginal and angular gyri, the MTG and the underlying mesial temporal cortex, ventral temporo-occipital areas (including the fusiform and lingual gyri), and the inferior frontal region. Spatial

overlap in activation was typically observed in the Wernicke's area for the three components. Tendency for Kanji and Hiragana to be associated with more lateralized temporoparietal activity did not reach statistical significance.

**Discussion:** The profiles of brain activity observed during the entire event-related magnetic response revealed similarities with the profiles found in previous studies of reading alphabetic scripts, such as English and Spanish. This profile features more lateralized (left) temporoparietal activity for two components of the Japanese writing system (Kanji and Hiragana) and a slightly greater degree of activity in the right for the third (Katakana), while spatial overlap was observed in the superior temporal gyrus across the three reading tasks. The brain activation profiles show substantial spatial overlap among the three components of the Japanese script, as well as similarity with maps associated with alphabetic writing systems.

**Conclusion:** The preliminary results of this study support the need for further comparison and analysis (using a larger number of subjects and more measures of neurophysiological activity), in order to formulate firm neurolinguistic theories concerning language comprehension and distinct profiles of brain activation.

## S69

### Quetiapine dose titration in clinical practice

R Filippou, G Yourgioti, K Papataxiarchou, On behalf of the AstraZeneca Collaborative Group  
Clinical Research Unit, Medical Department, AstraZeneca S.A., Athens Greece

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**Background:** An 8-week, multicentre, open-label, dose titration study of Quetiapine (Seroquel®) in patients with Schizophrenia was carried out with the objectives to (a) record the titration scheme and maximum achieved dose of Quetiapine for each patient and (b) assess the clinical efficacy and tolerability of Quetiapine as monotherapy.

**Material and Methods:** The study took place at 45 primary health care and hospital study sites. Patients diagnosed with schizophrenia of mild to moderate severity, hospitalized or outpatients, newly diagnosed or in acute exacerbation of chronic or subchronic schizophrenia were included in the study. All patients were required to score (a) at least 45 on the 18-item BPRS, (b) at least 4 (moderate) on two or more of BPRS items and (c) at least 3 on the CGI Severity of Illness item. Patients should be titrated with the assistance of "the Quetiapine titration pack" and reach the dose of 400 mg by day 5. During follow up the optimum dose for each patient should be reached in order to achieve symptoms' control. Psychopathology was assessed at baseline and at each of the six scheduled visits with the assistance of the BPRS, PANSS, CGI, and SAS scales. An overall assessment scale was also included, asking doctors to rate patients' progress as high, moderate or low improvement. Investigators were allowed to evaluate patients on all or selected rating scales. They were also allowed to prescribe concomitant medication (lorazepam, chloral hydrate, zolpidem). Before study enrollment patients provided written or witnessed verbal informed consent. In an intention to treat analysis, Chi-Square, Fischer's Exact Test and Analysis of Variance (ANOVA) were used as appropriate.

**Results:** 419 patients were eligible for statistical evaluation. Mean age was 37+ 11.5 years. 236 (56.32%) patients were male and 183 (43.68%) female. 68 (16.23%) patients were newly diagnosed and

351 (83.77%) were in acute exacerbation of chronic or subchronic schizophrenia.

Evaluated patients completed the dose titration period as follows: Day 1: 50 mg, Day 2: 100 mg, Day 3: 200 mg, Day 4: 300 mg, Days 5-8: 400 mg, Day 9: 600 mg. At day 56 (end of study period) in 117 patients (27.92%) the dose was maintained at 600 mg, in 239 patients (57.04%) the dose increased to 800 mg and in 63 patients (15.04%) the dose reached 1200 mg/day. Mean Quetiapine dose was 690 mg at day 56. Previous medication wash out was performed by dose decrease from 100% (day 1) to 50% (day 4) and finally 0% (day 8).

Regarding treatment efficacy, 241 (57.51%) patients were evaluated by overall assessment, 70 (16.71%) patients were evaluated by BPRS and 108 (25.78%) patients were evaluated by CGI. Based on psychopathology therapy evaluation 318 (75.89%) patients expressed high improvement score during overall treatment assessment, 83 (19.81%) patients expressed medium improvement score and 18 (4.3%) patients expressed low improvement score ( $p=0.000$ ). 28 patients (6.68%) recorded the following AEs: sedation (11), mild BP decrease (9), somnolence (8). No other AEs were reported during the study period.

**Discussion:** 1) Dose titration of Quetiapine started at day 1 with 50 mg and reached 600 mg by day 9. Thereafter dose was individually adjusted and reached a maximum of 1200 mg by day 56. Overall the mean dose for the study population at day 56 was 690 mg of Quetiapine. 2) Overall Quetiapine proved to be effective in improving patients' symptoms as 75.89% of patients showed high improvement according to the overall psychopathology assessment score, 19.81% showed moderate improvement, whereas only 4.3% showed low improvement. 3) Newly diagnosed patients were maintained at lower dose than already diagnosed patients. 4) The rates of recorded AEs were extremely low (6.68%) and not dose dependent.

## S70

### Predictors of treatment discontinuity in outpatient community mental health care

A Gouzaris, T Mouggiakos, D Ploumpidis, E Bethani  
CMHC of Vyronas-Kessariani, Athens University Medical School, Department of Psychiatry, Greece

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**Background:** Discontinuity of treatment among outpatients attending community mental health centers is a common concern. It negatively affects patients' treatment outcome and may lead to waste of service resources. A prerequisite for good treatment outcome is treatment continuity. However factors associated with dropout from treatment are inconsistent in results of various studies. This study aims at identifying specific demographic and clinical factors associated with dropout early in treatment, i.e. after 1 or 2 visits at a community mental health center.

**Material and Methods:** The present study was run between 1991 and 1998 and examined 2054 newly referred patients at the CMHC of Vyronas-Kessariani area in Athens. Among them, 1023 had only 1 or 2 visits at the center. However, 354 of the above 1023 patients came to the center for reasons other than a specific psychiatric or relational problem, which did not require attendance on a regular basis, and they were thus excluded from the study. Due to incomplete data found in 117 records, 552 patients who dropped out after 1 or 2 visits were included in the

study. This group was compared with a randomly selected group of 552 patients who presented with more than 2 visits.

**Results:** The two groups differed in a variety of characteristics, such as marital status, having children or not, route of referral, main presenting problem, previous psychiatric consultation or not, previous psychiatric hospitalizations, mode of treatment (i.e. pharmacological or not) and diagnosis. Logistic regression analysis was used to identify factors predictive of early dropout during the attendance at the center.

**Discussion:** Patients with major psychiatric disorders of lengthy duration, previous psychiatric consultation or hospitalization have a low risk of dropout. Patients with minor problems, of recent onset and having a better supportive system are in greater risk of dropout early in treatment.

### S71

#### Primary versus secondary psychopaths

AD MacKay, DM Romney  
University of Calgary, Canada

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**Background:** Blackburn's theory of psychopathy is based on the premise that there are two types of psychopath, primary and secondary, who might have different prognoses. The purpose of this study was to test the validity of his theory by examining the relationships between these two types of psychopathy and variables that should discriminate between them.

**Material and Methods:** Eighty-three incarcerated offenders were administered the Primary Psychopathy Scale, the Secondary Psychopathy Scale, the Personal Feelings Questionnaire, Hogan's Empathy Scale, the Curious Experiences Scale, the Defining Issues Test, and the Mach V.

**Results:** The results showed that the two types of psychopathy were not independent of each other ( $r=0.45$ ). The only variable that significantly differentiated one type of psychopathy from the other was empathy, which was unexpectedly higher in secondary psychopaths.

**Discussion:** Blackburn's theory proposing two distinct types of psychopathy received virtually no support from this study.

### S72

#### Off-Label indications for atypical antipsychotics: a systematic review

KN Fountoulakis, I Nimatoudis, A Iacovides, G Kaprinis  
3<sup>rd</sup> and 2<sup>nd</sup> Department of Psychiatry, Aristotle University of Thessaloniki Greece

*Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S72*

**Background:** With the introduction of newer atypical antipsychotic agents, a question emerged, concerning their use as complementary pharmacotherapy or even as monotherapy in mental disorders other than psychosis.

**Material and Methods:** MEDLINE was searched with the combination of each one of the key words: risperidone, olanzapine and quetiapine with key words that referred to every DSM-IV diagnosis other than schizophrenia and other psychotic disorders, bipolar disorder and dementia and memory disorders. All papers were scored on the basis of the JADAD index.

**Results:** The search returned 483 papers. The selection process restricted the sample to 59 papers concerning Risperidone, 37 concerning Olanzapine and 4 concerning Quetiapine (100 in total).

Ten papers (7 concerning Risperidone and 3 concerning Olanzapine) had JADAD index above 2. Data suggest that further research would be of value concerning the use of risperidone in the treatment of refractory OCD, Pervasive Developmental disorder, stuttering and Tourette's syndrome, and the use of olanzapine for the treatment of refractory depression and borderline personality disorder.

**Discussion:** Data on the off-label usefulness of newer atypical antipsychotics are limited, but positive cues suggest that further research may provide with sufficient hard data to warrant the use of these agents in a broad spectrum of psychiatric disorders, either as monotherapy, or as an augmentation strategy.

### S73

#### Successful treatment of anorexia with a combination of olanzapine, fluoxetine and mirtazapine at high doses: a case report

KN Fountoulakis, A Iacovides, V Koumaris, G Kaprinis  
3<sup>rd</sup> Department of Psychiatry, Aristotle University of Thessaloniki, Greece

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**Background:** Anorexia nervosa is one of the most difficult to treat psychiatric disorders, and (in contrast to bulimia) the role of pharmacotherapy in its treatment is limited to the management of comorbid disorders or secondary disorders.

**Material and Methods:** We report the case of a 21 years old female suffering from anorexia nervosa (restricting type).

**Results:** When admitted in our department she weighted 27 kg (height 160 cm). Her laboratory testing was normal. During the first two weeks of her admission she was refusing eat and insisted in exercising regularly. The case was considered a life-threatening one, the patient was fasted and a nasogastric tube was placed for feeding purposes. The pharmaceutical treatment rose gradually during the next week and reached 20 mg of olanzapine, 60 mg of mirtazapine and 60 mg of fluoxetine. The tube was left for only a week and then it was removed. The patient started eating with gradually increasing quantities. She remained in the hospital totally for 2.5 months more and during this period she gained 19 kg. No specific psychotherapeutic intervention was applied, so the improvement could be attributed mainly to medication. At release the patient not only was eating 3 fair meals daily but this was causing her minimal annoyance.

**Discussion:** To our knowledge this is the sole report in the literature on the use of the combination of olanzapine with antidepressants in the treatment of anorexia nervosa, without the co-administration of any kind of psychotherapy.

### S74

#### Three case-reports on the use of risperidone in the long-term treatment of bipolar disorder

KN Fountoulakis, I Nimatoudis, A Iacovides, G Kaprinis  
3<sup>rd</sup> Department of Psychiatry, Aristotle University of Thessaloniki Greece

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**Background:** The treatment of bipolar disorder is often complex, and patients suffer from serious adverse events due to treatment with mood stabilizers and especially lithium. Also, many of them are refractory to this treatment alone

**Material and Methods:** The current study is a report of 3 cases of female bipolar patients. All three patients were partial

responders to lithium therapy alone, and unresponsive to other therapies (anticonvulsants, antidepressants, typical antipsychotics, various combinations). They had suffered from a number of manic and depressed episodes which were at least 1–2 of each kind annually.

**Results:** All manifested complete remission of symptoms after combination therapy with lithium (plasma levels above 0.8 mEq/L) plus 1–3 mg of risperidone daily. The two of them are still free of symptomatology during the maintenance period for 16 and 17 months respectively. The third patient, after several months during which she was free of symptomatology discontinued lithium against the psychiatrist's advice and received only 3 mg of Risperidone daily. For the next 18 months (until now) the patient is under risperidone monotherapy and free of symptomatology.

**Discussion:** The follow-up period of the current study is the longest reported in the literature. The results support the usefulness of risperidone as monotherapy or in combination with mood stabilizers in bipolar disorder.

### S75

#### Neurobiological and psychological correlates of suicidal attempts and thoughts of death in patients with major depression

KN Fountoulakis, A Iacovides, F Fotiou, I Nimatoudis, F Bascialla, C Ioannidou, G Kaprinis, P Bech  
3<sup>rd</sup> Department of Psychiatry and Laboratory of Clinical Neurophysiology of 1<sup>st</sup> Department of Neurology, Aristotle University of Thessaloniki Greece and Frederiksberg General Hospital Department of Psychiatry, Hillerod Denmark.

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**Background:** Suicide is a major problem for psychiatry. Depression is the most common mental disorder related with suicidal behavior. The present study aimed to investigate the relationship of the symptomatology related to death, dying and suicide, with neurobiological factors in depressed patients.

**Material and Methods:** Fifty patients aged 21–60 years suffering from Major Depression. The SCAN v 2.0 and the IPDE were used to assist clinical diagnosis. The psychometric assessment included the Hamilton Depression Rating Scale (HDRS), the Hamilton Anxiety Scale (HAS), the 1965 and 1971 Newcastle Depression Diagnostic Scales, the Diagnostic Melancholia Scale (DMS), the General Assessment of Functioning Scale (GAF) and the Personality Deviance Scale (PDS). Psychophysiological Methods included Electro-oculogram (EOG), Flash-electro-retinogram (f-ERG) in photopic and scotopic conditions, and Pattern-Reversal Visual Evoked Potentials (PR-VEPs). Biological Markers included the 1 mg DST, the 30 mg Dexfenfluramine Challenge Test and brain <sup>99m</sup>Tc-HMPAO SPECT. The statistical analysis included 1, 2 and 3-way MANOVA and MANCOVA and the Scheffe test as post hoc test.

**Results:** Patients without thoughts of death had higher self confidence, and less overdependency on others and introjectiveness. Suicidal patients had significantly prolonged PR-VEPs latency in comparison to the rest of patients.

**Discussion:** The findings of the current study were related to the status of the patient at interview but not to his/her history. They also provide neurobiological data to support the need for a combined presence of self-directed aggression and higher arousal level or disinhibition of self-directed aggressive thoughts in order for a patient to become suicidal. Further study is needed to test

whether psychophysiological methods, which are non-invasive and easy to perform, are of value in the therapeutic planning and monitoring of response.

### S76

#### Life events and clinical subtypes of major depression: a cross-sectional study

KN Fountoulakis, SG Kaprinis, A Iacovides, GS Kaprinis, R Rahe

3<sup>rd</sup> Department of Psychiatry, Aristotle University of Thessaloniki, Greece

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**Background:** The present study aimed to investigate the relationship between stressful life events and depression.

**Material and Methods:** Ninety (90) patients (32 males and 58 females) aged  $36.57 \pm 12.02$  years suffering from Major Depression according to DSM-IV criteria entered the study, and 121 controls (28 males and 93 females), aged  $27.11 \pm 10.59$  years. Diagnosis was obtained with the SCAN v 2.0 and the IPDE. The psychometric assessment included the HDRS-17, HAS, the Newcastle Scale (version 1965 and 1971), the Diagnostic Melancholia Scale and the GAF scale. The Life Change Units (LCU) according to the method proposed by Rahe et al, were used for the quantification of life events. The Statistical Analysis included ANCOVA (with age and gender as covariates) and Pearson Correlation Coefficient.

**Results:** 34 patients were melancholics, 17 atypicals and 39 were undifferentiated. LCU score was  $126.93 \pm 148.02$  for controls,  $151.54 \pm 134.74$  for depressives and  $249.53 \pm 152.57$  for atypicals,  $78.26 \pm 94.46$  for melancholics and  $172.72 \pm 124.13$  for undifferentiated patients. Males reported significantly more life events than females. Atypical depressives differed both from controls and from the other depressive subtypes. Atypical males differed from all other gender-by-type groups, while no other differences were present. LCU correlated negatively with the age of onset of depression ( $-0.40$ ), with indices of melancholy ( $-0.51$ ), and with HDRS-17 ( $-0.50$ ), but did not correlate with anxiety or functioning.

**Discussion:** The results of the current study suggest that subgroups of depressive patients are characterized by the presence of stressful life events. Atypical patients may report the highest load of life events. The question that arises is whether this is a true fact or these patients (which have higher personality psychopathology and interpersonal rejection sensitivity) tend to over-report life events.

### S77

#### Ecchymoses as an adverse effect of fluoxetine treatment

KN Fountoulakis, S Samolis, A Iacovides, G Kaprinis  
Laboratory of Psychophysiology, 3<sup>rd</sup> Department of Psychiatry, Aristotle University of Thessaloniki, Greece

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**Background:** Abnormal bleeding has been reported with several antidepressants especially SSRIs. Only 25 cases have been reported in the literature, covering a spectrum from abnormal subclinical laboratory findings to ecchymoses and bleeding. Although there are theories concerning the etiopathogenic mechanisms, data are inconclusive.

**Material and Methods:** We report a case of ecchymosis leading to treatment discontinuation following fluoxetine use. The case concerned a 28 years old female patient suffering from DSM-IV major depression.

**Results:** She was not receiving any medication during the previous 6 months. She was started on fluoxetine 20 mg daily and after three weeks the dose raised to 40 mg. After about a week and while the patient started responding to treatment, she manifested 7 ecchymoses in the inner surface of both thighs. All laboratory investigation including blood and biochemical testing, liver and renal function, prothrombin time, partial prothrombin time and bleeding time were normal. This was in accord with the literature. She was changed to sertraline (gradually up to 200 mg daily). Depressive symptoms resolved within the next four weeks. About one and a half month after fluoxetine discontinuation and still under sertraline treatment ecchymoses gradually disappeared. From the history of the patient, it is clear that there was a temporal relationship between ecchymoses and fluoxetine treatment.

**Discussion:** Although ecchymoses is a benign adverse effect of antidepressant therapy, it is important for the clinician to be alert, since its relationship to other life-threatening blood-related adverse effect is unknown

## S78

### Clinical and neuroimaging correlates of abnormal short-latency somatosensory evoked potentials in elderly vascular dementia patients: a psychophysiological exploratory study

I Tsiftsiopoulos<sup>1</sup>, KN Fountoulakis<sup>2</sup>, K Sitzoglou<sup>3</sup>, A Papanicolaou<sup>1</sup>, K Phokas<sup>4</sup>, F Fotiou<sup>5</sup>, G Kaprinis<sup>1</sup>  
<sup>1</sup>Laboratory of Neurophysiology, Agios Pavlos NHS Hospital, Thessaloniki Greece; <sup>2</sup>Laboratory of Psychophysiology, 3rd Department of Psychiatry, Aristotle University of Thessaloniki, Greece; <sup>3</sup>Laboratory of Neurophysiology, Mental Hospital of Thessaloniki, Greece; <sup>4</sup>2<sup>nd</sup> Department of Psychiatry, Aristotle University of Thessaloniki, Greece; <sup>5</sup>Laboratory of Neurophysiology, 1st Department of Neurology, Aristotle University of Thessaloniki, Greece

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**Background:** Short Latency Somatosensory Evoked Potentials (SEPs) may serve to the testing of the somatosensory tract function, which is vulnerable and affected in vascular encephalopathy. The aim of the current study was to search for clinical and neuroimaging correlates of abnormal SEPs in vascular dementia (VD) patients.

**Material and Methods:** The study included 14 VD patients, aged  $72.93 \pm 4.73$  years, and 10 controls aged  $71.20 \pm 4.44$  years. All subjects underwent a detailed clinical examination, blood and biochemical testing, brain MRI and were assessed with the MMSE. SEPs were recorded after stimulation from upper and lower limbs. The statistical Analysis included 1 and 2-way MANCOVAs and Factor analysis.

**Results:** The N13 latency was significantly prolonged, the N19 amplitude was lower, the P27 amplitude was lower and the N11-P27 conduction time was prolonged in severely demented patients in comparison to controls. The N19 latency was prolonged in severely demented patients in comparison to both mildly demented and controls. The same was true for the N13-N19 conduction time, and for the P27 latency. Patients with

subcortical lesions had all their latencies prolonged and lower P27 amplitude.

**Discussion:** The results of the current study suggest that there are significant differences between patients suffering from VD and healthy controls in SEPs, but these are detectable only when dementia is severe or there are lesions located in the subcortical regions. The results of the current study locate the abnormal SEPs in the white matter, and are in accord with the literature.

## S79

### Successful treatment with amisulpride of a woman with tourette's disorder: a case report

KN Fountoulakis, A Iacovides, GS Kaprinis  
 3<sup>rd</sup> Department of Psychiatry, Aristotle University of Thessaloniki, Greece

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**Background:** Tourette's disorder is generally treated with antipsychotic medication. Pure antidopaminergic activity is considered the way antipsychotics act in these patients. Amisulpride is the purest antidopaminergic atypical antipsychotic, and thus could serve as an ideal choice for the treatment of Tourette's disorder

**Material and Methods:** We report the case of a 40 years old married female suffering from Tourette's disorder.

**Results:** At the age of 5, the patient manifested involuntary head movements, at the age of 8 involuntary leg movements and by the age of 12–13 years vocal tics appeared. During the previous 10 years the patient received mirtazapine, buspirone, valproic and sulpride. Only sulpride had a weak effect. The patient was assessed with the Yale Global Tics Severity Scale. Her baseline motor score was 16, her phonic score 18 and her impairment score 30. She was put on amisulpride 100 mg per day. Three weeks later her scores dropped to 9, 10 and 20 respectively. Amisulpride was raised to 200 mg daily and after another three weeks her scores were 5, 6 and 10 respectively. A further titration to 400 mg/day was made but without further improvement. The patient decreased the dose to 100 mg/day without any deterioration in her condition. For the next three months the patient continued receiving treatment and her condition was stable. Then she decided to discontinue because of amenorrhea and within 20 days the symptoms reappeared. Her scores climbed to 10, 11 and 30. The patient decided to restart amisulpride treatment and simultaneously started visiting a gynecologist for the treatment of amenorrhea.

**Discussion:** To our knowledge this is the first report concerning the use of amisulpride in Tourette's disorder.

## S80

### Reliability and psychometric properties of the Greek translation of the state-trait anxiety inventory form Y: preliminary data

KN Fountoulakis, M Papadopoulou, S Kleanthous, A Papadopoulou, V Bizeli, G Agori, I Nimatoudis, A Iacovides, GS Kaprinis  
 3<sup>rd</sup> Department of Psychiatry, Aristotle University of Thessaloniki, Greece

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**Background:** The State-Trait Anxiety Inventory form Y is a brief self-rating scale for the assessment of state and trait anxiety. The

aim of the current preliminary study was to assess the psychometric properties of its Greek translation.

**Material and Methods:** 121 controls  $27.22 \pm 10.61$  years old, and 22 anxiety-depressed patients  $29.48 \pm 9.28$  years old entered the study. In 20 of them the instrument was re-applied 1–2 days later. Translation and Back Translation was made. The clinical diagnosis was reached with the SCAN v.2.0 and the IPDE. The Symptoms Rating Scale for Depression and Anxiety (SRSDA) and the EPQ were applied for cross-validation purposes. The Statistical Analysis included the Pearson Correlation Coefficient and the calculation of Cronbach's alpha ( $\alpha$ )

**Results:** The State score for controls was  $24.95 \pm 11.36$  and the Trait score was  $27.88 \pm 11.43$ . The respected scores for depressed subjects were  $44.91 \pm 9.18$  and  $43.50 \pm 9.99$ . Both State and Trait scores followed the normal distribution in control subjects. Cronbach's alpha was 0.19 for the State and 0.39 for the Trait subscale. The Pearson Correlation Coefficient between State and Trait subscales was 0.79. Both subscales correlated fairly with the anxiety subscale of the SRSDA. Test-retest reliability was excellent, with Pearson coefficient being between 0.77 and 0.98 for individual items and equal to 0.96 for State and 0.98 for Trait.

**Discussion:** The current study provided preliminary evidence concerning the reliability and the validity of the Greek translation of the STAI-form Y. Its properties are generally similar to those reported in the international literature, but further research is necessary.

## S81

### Epidemiological analysis of completed suicide in the Greek countryside: a retrospective study

Z Koutsogianni, V Charisi, D Frongou, I Koutsogiannis, K Bakaras

*Psychiatric Department of General Hospital of Lamia, Greece*

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**Background:** The aim of our study is to describe the epidemiology and characteristics of all suicide deaths among patients suffering from mental disorders in our region.

**Material and Methods:** In order to access all these features we reviewed 21 suicide deaths in adults, during the period 1992–2002 in our area (Fthiotida).

**Results:** Eighteen (18) of the patients were male, 3 female. Mean age was 43 years, with an age range from 19 to 74 years. Only 3 patients had academic education. Most of the victims were farmers. Six (6) patients were unemployed. The events occurred mainly during period April–May (7/21). According to their medical history they suffered from depression (7 patients), psychosis (5 patients), ethanol–drug abuse (4 patients), bipolar disorder (3 patients), personality disorders (2 patients). Twelve (12) patients were under medical treatment for psychosis (5 cases), depression (4 cases), bipolar disorder (3 cases). Nine (9) of them refused to take their treatment or visit the psychiatrist during the last two months prior their death. They did not have family support. A family history of suicide was recorded in two cases. Previous attempts of suicide were documented in 3 cases, whereas violent behavior in their environment was reported in 6 cases. History of hospitalization for any psychiatric disorder was detected in 10 cases. Causes of death in order of frequency were hanging (13 patients), jumping from high places (3 patients), drug intoxication (3 patients), fire gun shooting (2 patients).

**Discussion:** Hanging was the predominant method in all suicide deaths. History of hospitalization for psychiatric disorders was documented in half of the cases. A minority had a documented history of prior suicide attempts. Exposure to recent stressful life events was the trigger point to suicide. These findings could help health professionals be more effective in the prevention of suicide morbidity and mortality.

## S82

### Psychological disorder in children with learning disabilities

A Michopoulou, A Nikolaou, A Karagianni, M Vouyoukli  
*General Children's Hospital of Penteli, Athens Greece*

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**Background:** Previous pilot studies at Penteli Children's Hospital (based on Achenbach children questionnaire, completed by parents) indicated that children with learning disabilities present secondary psychological problems (e.g. depression). At the present study we aim to extend and systematize the typology of psychological problems on a larger clinical population.

**Material and Methods:** The clinical sample consists of 100 children with learning disabilities from the age of 7 to 14 years old. As part of the clinical assessment, apart from Achenbach questionnaire, we provided children with the Beck personality questionnaire

**Results:** It was found that 26% of children have low self-concept, 31% anxiety, 19% depression, 21% anger and 21% disruptive behavior.

**Discussion:** We can conclude that children with learning disabilities manifest vulnerability to psychological problems and especially anxiety disorder.

## S83

### Genetic investigation of dopamine and GABA in mood disorders

DG Dikeos, GN Papadimitriou

*Athens University Medical School Department of Psychiatry, Clinical and Molecular Neurogenetics Unit, Eginition Hospital, and University Mental Health Research Institute, Vas. Sofias 72, Athens 11528, Greece*

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**Background:** Serotonin and norepinephrine are the most extensively studied neurotransmitters in mood disorders. Other neurotransmitter systems are considered to be also involved and recent interest expands to include them in the research. Here we present the findings of genetic association studies regarding dopaminergic and GABAergic receptors in mood disorders.

**Material and Methods:** Forty-eight patients with bipolar, 40 with unipolar mood disorder and 50 normal subjects were diagnosed after personal interview according DSM-IV criteria and were genotyped for the dopamine receptor  $D_2$  and  $D_3$  genes (DRD2 on chromosome 11q22-q23 and DRD3 on chromosome 3q13.3) and for the GABA receptor alpha5 and beta3 genes (GABRA5 and GABRB3, both in the region 15q11-q13).

**Results:** A genetic association was observed between the DRD3 gene and unipolar mood disorder and between the GABRA5 gene and bipolar mood disorder. For the DRD2 and GABRB3 genes, evidence for association with affective illness was not found.

**Discussion:** These results suggest that, in addition to other neurotransmitter systems and biological aberrations,

dopaminergic and GABAergic influences may be implicated in the pathogenetic mechanisms of mood disorders.

#### S84

##### The effects of a psychosocial rehabilitation program on the cognitive functioning of chronic schizophrenic patients

MV Karidi<sup>1,2</sup>, K Papakonstantinou<sup>1</sup>, A Lebessi<sup>1</sup>, M Pouloudi<sup>1</sup>, A Rabavilas<sup>1,2</sup>

<sup>1</sup>Research unit of psychosocial factors in rehabilitation of mental patients, University Mental Health Research Institute, Athens, Greece; <sup>2</sup>Department of Psychiatry, Medical School, University of Athens, Greece

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**Background:** Schizophrenic disorder is known to be accompanied by cognitive deficits such as impairments of attention, concentration, working memory, and executive function. It is under investigation whether these deficits correlate with indices of psychopathology. The present study aims to investigate the effects of the participation in a vocational psychosocial rehabilitation program on the cognitive functioning of chronic schizophrenic patients and how these effects are determined by their age at illness onset. It also aims to examine whether cognitive functioning correlates with psychiatric symptomatology.

**Material and Methods:** 141 chronic schizophrenic patients (mean duration of illness 8.7 years) attended for 18 months an integrated program of vocational psychosocial rehabilitation designed specially for schizophrenics, which comprised training workshops, and individual and group psychotherapeutic and psychoeducational interventions. During that time patient psychopathology was assessed routinely by the B.P.R.S. and their general functioning by the Occupational Abilities and Performance Scale (O.A.P.S.) For the needs of the present study the following 7 items of the O.A.P.S. relevant to cognitive abilities were examined: 1) "Has the ability to follow instructions", 2) "Pays attention to details", 3) "Can work quickly if necessary", 4) "Can learn new activities", 5) "Remembers instructions", 6) "Concentrates while working", 7) "Has the capacity to perceive and form an idea of the outside world".

**Results:** Initial results show a significant difference between the measurement at the beginning of the program and the measurement at its completion for all 7 items of the O.A.P.S. The correlation between the scores on the above mentioned items at the completion of the program and the scores on the items of B.P.R.S. assessing negative symptoms at the beginning of the program is to be investigated.

**Discussion:** Participation in a vocational psychosocial rehabilitation program results in improvement in the cognitive abilities of chronic schizophrenic patients.

#### S85

##### Depression after stroke

D Theofanidis<sup>1</sup>, X Fitsioris<sup>2</sup>, G Georgiadis<sup>2</sup>

<sup>1</sup>2<sup>nd</sup> IKA Hospital, Thessaloniki; <sup>2</sup>Papageorgiou Hospital, Thessaloniki

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**Background:** Stroke is the third commonest cause of death but the leading cause of disability in Western societies. Although stroke's financial and social impact have been well established, its

psychological parameters have not been well established yet. Depression is also a frequent disorder (15–30% among the elderly). Hence, post-stroke depression is difficult to discern whether it is being either a primary organic affective syndrome or a direct effect of stroke.

**Material and methods:** A Medline and Cinhal search was conducted in order to retrieve papers concerning Post Stroke Depression (PSD). There was a total of 123 papers, 25 of which were relevant for this reviews' purpose.

**Results:** PSD is a quite common condition among stroke survivors with a prevalence ranging from 17–64%. The wide range frequency may be explained by differences in diagnostic criteria, patient selection, instruments used and acute or subacute phases of recovery.

**Discussion:** The diagnosis of depression after stroke is a troublesome task, especially in the light of the following: the target population is elderly with a high incidence of depression prior to the stroke (coexistence), with high comorbidity, stroke's aetiology (lesion's size and location), patient's social problems, and patient's post stroke communication problems (dysarthria, dysphasia or aphasia). Conclusion: Various studies have shown that PSD is a significant predictor for mortality and rehospitalization. There is also increasing evidence that PSD slows patients down in rehabilitation, (as it has been calculated at 6 months and two years after stroke) and limits their overall potential for recovery.

However, PSD is not a disorder that is all that difficult to tackle. Clinicians who have an interest in PSD can use interview skills and sensitivity to non-verbal communication in order to detect and treat depression after stroke.

#### S86

##### Sentence comprehension in Williams syndrome and specific language impairment: a comparative approach

S Stavrakaki

Department of Human Communication Science University College London

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**Background:** Williams syndrome (WS) is a rare neurodevelopmental disorder of genetic origin which results in relatively spared language in the face of serious non-verbal deficits (Bellugi & Wang, 1996) whereas Specific Language Impairment (SLI) is a non-acquired language disorder in the face of non-impaired sensory and cognitive systems (Stark & Tallal, 1981). The present study investigates aspects of syntactic comprehension in Greek children with SLI and WS.

**Material and Methods:** First, it examines the performance of SLI and WS children on the interpretation of sentences with different syntactic properties. Second, it compares the performance of the WS and SLI children to that of mental age (MA) controls and language age (LA) controls respectively. One group of 5 children with WS aged 7.9–15 (Mean: 10.1; S.D: 2.94) and one group of 8 SLI children aged 6.1–10 (Mean: 8.1; S.D: 1.47) participated in the study. There were two control groups: One MA control group of 10 normally developing children (aged 3.3–7.3; Mean: 5 S.D: 1.7) matched to the WS children on the IQ scores as derived by the Greek version of WISC-III; and an LA control group of 16 normally developing children (aged 3.6–5.6, Mean: 4.4, S.D: 0.73) matched to the SLI children on language abilities. The experimental material included simple transitive

structures with SVO word order as well as structures formed by A-bar movement i.e. subject and object wh-questions, subject and object-clefts, and A-movement, i.e. passive sentences. The method employed was based on toy manipulation tasks, i.e. act out tasks for all sentence types except for wh-questions and questions after stories where figurines took part for wh-questions.

**Results:** The results indicated that the SLI children performed at ceiling on all structures with SVO word order, i.e. transitive sentences, who-subject questions and subject clefts whereas their performance dropped on those structures where the linear SVO word was violated, i.e. object wh-questions, object clefts and passive sentences. By contrast, LA controls performed at ceiling on structures with SVO word order and object wh-questions, whereas they showed chance performance on object clefts and passive sentences. Similarly, the WS children performed at ceiling on the structures with SVO word order and who-object questions. The drop of their performance on object clefts and passive sentences did not result in below chance performance, as is the case with the SLI children. Crucially, the performance of the WS children is not significantly different than that of the MA controls on all tested structures.

**Discussion:** In sum, there was a considerable drop of the SLI performance on all structures, whose interpretation cannot be achieved through the application of the SVO word order strategy but requires knowledge of syntactic operations, i.e. A- and A-bar movement, whereas no such drop was found for the WS and normal performance. Therefore, the operation of syntactic movement is well preserved in WS (cf. Clahsen & Temple, 2003) but not in SLI grammar (cf. van der Lely, 1999).

### S87

#### Does depression correlate with elderly patient satisfaction and perceived quality of hospital care?

V Raftopoulos

Department of Nursing, Faculty of Health Sciences and Technical Education Institute of Larissa Greece

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**Background:** Patient satisfaction with quality of hospital care is a dominant concept with respect to the implementation of quality assurance and quality improvement programs. Elderly patients are the central users of health care services and therefore the assessment of elderly perceived quality of hospital care is important for strategy planning and evaluation of health care services. The relevance of patient satisfaction studies is often questioned because of conceptual and methodological problems due to the underused qualitative research. The aim of this research was to develop global scales that, in comparison with existing patient satisfaction scales would: (1) be valid and reliable, assessing elderly patients' satisfaction with quality of hospital care, based on the existing literature evidence, on results of a qualitative research and on a previous developed conceptual framework, (2) measure perceived quality of hospital care from the perspective of elderly patients and (3) explore how elderly patients' depression (by using Geriatric Depression Scale) correlates with patient satisfaction and perceived quality of hospital care.

**Material and Methods:** 380 elderly patients from 8 Greek hospitals participated to the study (209 male, 171 female). The mean age of the sample was  $73.07 \pm 6.04$  years. We evaluated the taxonomy and the feasibility of the scales using reliability analyses.

We used a combination of qualitative and quantitative research methods.

**Results:** The vast majority of elderly patients were somewhat satisfied with quality of hospital care (90.3%), of food (79.3%), of medical (95.6%) and nursing care (94%). Regarding the hospital services, elderly patients expressed also dissatisfaction with hospital care (0.8%), food (9.6%), medical (0.5%) and nursing care (2.9%). Among the depressed elderly patients, a high percentage (82.8%) was satisfied with global hospital care, with food (73.3%), medical (93.1%) and nursing care (93.2%). Dissatisfaction was expressed with global quality of hospital care (0.7%), of food (1.4%), medical (1.4%) and nursing care (0.1%). Elderly patients' depression correlates negatively with (a) perceived quality of hospital care, of medical and nursing care, (b) global satisfaction with care and hospital food, and (c) their expectations from hospital care.

**Discussion:** For the depressed elderly patients their level of global satisfaction with hospital care, food, medical and nursing care was greater than their expectations. With increasing age, elderly patients express greater mean global satisfaction with hospital and nursing care. Elderly patient depression affects perceived quality of hospital care and satisfaction. Global satisfaction with provided nursing care is the main predictor of global satisfaction with hospital care, between the non-depressed elderly patients. On the contrary, in the sample of the depressed elderly patients, the main predictor is the global satisfaction with medical care. Global perceived quality of hospital care predicts more, global satisfaction with hospital care.

### S88

#### Left-handedness among persons with asthma

G Krommydas<sup>1</sup>, V Raftopoulos<sup>2</sup>, E Kotrotsiou<sup>2</sup>, T Paralikas<sup>2</sup>, K Gourgoulanis<sup>3</sup>

<sup>1</sup>Lung function lab, Physiology Department, Medical School, Larissa, University of Thessaly; <sup>2</sup>Department of Nursing, Faculty of Health Sciences, Technical Education Institute, of Larissa, Thessaly; <sup>3</sup>Pulmonary Department, Medical School, Larissa, University of Thessaly Greece

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**Background:** It has been postulated that there is an increased incidence of left-handedness among persons with asthma. Although most researchers agree that asthma and left-handedness relate each other in childhood, studies of subjects after adolescence found no association between left-handedness and asthma. The aim of this preliminary study was to investigate the relation between asthma and handedness in young adults as well as to estimate the evolution of asthma from adolescence to adulthood in a subgroup of left-handed and ambidextrous individuals with asthma.

**Material and methods:** 274 students of the Faculty of Health Science in Larissa, aged 18–35 years old, were asked to fill in a translated and adapted version of the ISAAC questionnaire and the Edinburgh Handedness Inventory. Fully completed questionnaires reached the number of two hundred and sixty-eight. For asthma assessment was used the ISAAC-phase I/ Part-I ages 14–16 years old, questionnaire. The Phase I questionnaire consists of three parts. In the first Part, the frequency and symptomatology of asthmatic attacks is examined. To evaluate the severity of asthma the Global Initiative for Asthma (GINA) guidelines were used. For the assessment of handedness it was used the Edinburgh Handedness Inventory. The handedness of

each individual was determined according to the formula LQ (Latency Quotient) =  $(R-L) \times 100 / R + L$  where R and L stands for Right and Left respectively. Each question has 10 points. R and L represent the sum of points of the questions. The range of quotients was -100 for extreme left-handedness to +100 for extreme right handedness. The criterion LQ <0 was taken to indicate left-handedness in this experiment, in accordance with Oldfield. The criterion of LQ  $\leq 60$  was used to indicate non-right-handedness.

**Results:** 29 women suffered from asthma. Asthma-like symptoms in the past three years and use of anti-asthmatic drugs in the last year were traced in 29 and 8 women respectively. Fourteen patients reported asthma symptoms in the past twelve months. Twenty-three women reported that they were given a medical diagnosis of asthma or asthma-like symptoms in the past. Most mentioned the term asthma-like disease. As chronic bronchitis and emphysema are rare below age 35, the majority of the symptomatic subjects were likely to have had asthma. From the view of this study, these women were treated as having asthma. The mean age of the students was 21 years. According to GINA guidelines the students overall were presented with mild asthma. 90.4% of the students had less than one episode of wheezing per week while 76% had no admission to hospital in the last year. All the asthmatic individuals reported that symptoms first appeared in childhood or in early adolescence (<14 years). Left-handedness or ambidexterity was traced in 38 persons in total (14.5%) and in six women among asthmatic individuals. Four women with asthma were left-handed (LQ <0) and two mixed-handed (0 < LQ < 60). All these six women reported an asthma diagnosis in the past. Although there was a tendency towards left-handedness in asthmatic individuals the differences observed failed to reach significance. None of these six women reported asthma symptoms after eighteen years old and they were all free of symptoms for at least the past two years. Thirteen out of the 23 right-handed women reported persistence of asthma symptoms after eighteen years old while in ten women there were no symptoms thereafter.

**Discussion:** The Geschwind-Behan-Galaburda (GBG) hypothesis suggests that high levels of testosterone during fetal life could result to the development of left-handedness by delaying the growth of the left hemisphere. Additionally, testosterone could also affect the development of thymus, favouring the appearance of immune disorders and allergic diseases early in life. There is evidence that GBG's theory applies in asthma and allergic diseases as well. In this study, however, there were no statistically significant differences between the asthmatic and non-asthmatic groups although the former showed a higher percentage of left-handedness. The failure to reach significance could be attributed to the small number of subjects. When larger samples are studied a statistically significant difference concerning left-handedness between allergic and non-allergic subjects is found. However, the prevalence of left-handedness found in asthmatic and non-asthmatic children was similar to the one found in other studies. It is probable that ambidextrous asthmatics have fewer asthmatic attacks than right-handed ones as they enter adult life, despite the fact that left-handed asthmatics might experience more asthma attacks in childhood than right-handed ones. None of the ambidextrous asthmatics reported asthmatic attacks after 18 years old and a statistical difference was established between the two groups. If non-right-handed persons with asthma finally turned out to have a different prognosis, this might lead to a

further understanding of mechanisms and genes underlying the disease of asthma and other immune disorders.

## S89

### Daily distribution of death incidents concerning patients with neuropsychiatric disorders who were being treated in a psychiatric clinic

I Gravas, G Krommidas, V Raftopoulos, D Polimerou, M Kriki, C Athanasias, A Skillakos  
Psychiatric clinic: "Ippokration" Larissa, Greece

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**Background:** The aim of this study was to convey a research as to whether the deaths of patients that suffer from neuropsychiatric disorders and receive medical treatment in a mental clinic, can be related to certain times of the day and night, on a 24-hour basis.

**Material and method:** The study concerned 182 decedents, who suffered from organic psycho syndromes, dementia, psychotic syndromes and emotional disorders. The average age of the decedents was 81.9 years old. The study concerned 182 decedents, in a total of 1265 patients (that were being hospitalized for the first time) within a 2-year period. The women patients were 616 and the men were 549. The patients mentioned above also presented morbidity in other pathological diseases like coronary disease, diabetes mellitus, chronic obstructive pulmonary disease (COPD), cerebral vascular accidents (CVA) and neoplasias. The research was conducted during a 2-year period, and it was in this time-period that the patients mentioned above died, while they were being treated in the psychiatric clinic "Ippokration". Every 24 hour period was split in two. The first time period was from 6:00 a.m. to 8:00 p.m. and the second was from 8:00 p.m. to 6:00 a.m. of the next day. This method has been used in many other researches according to the international bibliography.

**Results:** A difference was noticed, as to the number of deaths in each one of the two time-periods set. 107 deaths occurred between 6:00 a.m. and 8:00 p.m., whereas 75 deaths occurred from 8:00 p.m. to 6:00 a.m. of the following day. This difference was not statistically significant ( $p > 0.05$ ). 118 of the decedents were women and 64 of them were men. However, there was a significant difference if we take into account the fact that more women died between 6:00 a.m. and 8:00 p.m. (74 deaths) than those who died between 8:00 p.m. and 6:00 a.m. (44 deaths). This finding was considered statistically significant ( $p < 0.05$ ) and is the outcome of the present study.

**Discussion:** The current study suggests that patients died between 6:00 a.m. and 8:00 p.m. were mainly female.

## S90

### Gender, neonatal handling and pubertal stress affect cognitive abilities.

S Pondiki<sup>1</sup>, T Panagiotaropoulos<sup>1</sup>, E Kitraki<sup>2</sup>, H Philippidis<sup>1</sup>, F Stylianopoulou<sup>1</sup>

<sup>1</sup>Laboratory of Biology-Biochemistry, Faculty of Nursing, University of Athens, Papadiamantopoulou 123, 11527, Athens, Greece; <sup>2</sup>Laboratory of Histology, School of Medicine, Mikras Asias 70, 11527, Athens, Greece

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**Background:** Early experiences affect brain development and yield long term changes in the neurobiology and behavior of the

offspring. Neonatal handling, an experimental paradigm for early experiences, modifies the function of the limbic system – HPA axis and improves the organism's ability to cope with stress in males. Corticosteroids act through their type-1 (MR) and type-2 (GR) receptors. Corticosteroid binding to hippocampal MRs and GRs affects spatial learning and memory, a process also influenced by the basal forebrain cholinergic system. It is well known, that there are sex differences in both HPA axis function and cognition. Puberty is the last step in brain development and marks an important phase with regard to sexually dimorphic cognitive performance and behavior. Based on the above, we studied the effect of neonatal handling and pubertal chronic forced swimming stress on spatial learning of adult male and female rats following an acute restraint stress and determined the levels of brain corticosteroid receptors upon termination of the Morris water maze test. Furthermore, we determined the effect of neonatal handling on hippocampal AchE levels of adult male and female rats.

**Material and Methods:** Spatial learning and memory were assessed in the Morris Water Maze. Hippocampal MR and GR levels were determined immunocytochemically. Circulating corticosterone levels were measured by RIA. AchE levels were estimated histochemically. Data were statistically analyzed by ANOVA.

**Results:** Handled males have a higher ability for learning compared to both handled females and non handled males. Pubertal stress impairs learning only in the non handled males. Memory is affected by handling only in male rats, with handled males outperforming the respective non handled. Pubertal stress cancels this effect of handling. Neonatal handling affects MR and GR levels differently in the two sexes: Handled males have lower MR and higher GR levels compared to the non handled males, while handled females have higher GR and equal MR levels compared to the non handled. Pubertal stress reverses the effect of handling in males and potentiates its effect in females

**Conclusion:** Neonatal handling and pubertal stress interact and influence the ability for spatial learning, as well as GR and MR levels in the hippocampus in a sex-dependent way.

## S91

### Internet and the psychiatric patient: our experience

G Labiris<sup>1</sup>, G Lentaris<sup>1,2</sup>, M Spiliotis<sup>1</sup>, M Kopp<sup>3</sup>  
<sup>1</sup>Intermedico Medical Network; <sup>2</sup>General State Hospital of Pireus, Psychiatric Department; <sup>3</sup>Institute of Behavioural Sciences, Semmelweis Medical University

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**Background:** The provision of medical advice in psychiatric patients, using the advanced services of the internet.

**Material and Methods:** This is a retrospective, population based study in 261 psychiatric patients from a random sample of 1500 patients that visited our medical site, seeking medical advice using the electronic mail, teleconference or IRC private channels. A team consisting of two general practitioners, two psychiatrists, a neurologist and an internist, was held responsible for the processing of the requests. The following medical data were considered as absolute minimum for the completion of the service: age of the patient, location, marital status, medical and family history, present and past complaints. In case of important data were missing, our team would contact the patient for further information.

**Results:** 198 of the 261 requests were processed. In the remaining requests, either certain important data were missing, or the clinical or imaging examination were absolutely necessary. 47.5% (n=94) of the patients were seeking advice for close relatives and 72.7% (n=144) were between 20 and 45 years old. 12.6% (n=25) of requests were on substance-related disorders and 14.1% (n=28) were related to schizophrenia and other psychotic disorders. Another 19.7% (n=32) were classified as suffering from mood disorders, whereas 20.2 % (n=40) of cases belonged to anxiety disorders. The remainder 36.9% (n=73) included among others psychosomatic, eating, somatoform, sleep and personality disorders. After processing the requests, 40.9% (n=81) of the patients replied by expressing their satisfaction, while 48.5% (n=96) of patients stated that our service was essential in understanding their problem.

**Discussion:** Internet and modern technologies provide a reliable, alternative solution in the provision of medical advice, adjuvant to the conventional medical services.

## S92

### Mental illness in Crete in the beginning of the 20<sup>th</sup> century: the Souda lunatic asylum

G Lentaris<sup>1,2</sup>, G Labiris<sup>1</sup>, G Theologos<sup>2</sup>  
<sup>1</sup>Intermedico Medical Network; <sup>2</sup>General State Hospital of Pireus, Psychiatric Department

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**Background:** To look for any data available, regarding the existence and function of state mental institutions in Crete during the past.

**Material and Methods:** Inquiries were made for relevant material in the Historical Cretan Archives building, as well as the Municipal Library of the City of Chania.

**Results:** The first official provision for the insane in Crete was held in 1910, 12 years after gaining its independence from the Turks and 3 years before the island's formal reunion with Greece, when the Parliament of the Independent Cretan State voted for the formation of a lunatic asylum near the port of Souda. Local police officers and Mayors were responsible for gathering the insane patients. The military doctor was then entrusted with pronouncing whether the patient was necessary to be confined or discharged. In his absence, the municipal doctor, or the "doctor for common women" had to carry out this task. Some 330 patients were admitted but later their number nearly doubled. The local prefect had the authority of inspecting the asylum without prior notice. It should be noted that the superintendent earned the same salary as the steward, which was double than that of the guardians. The families of the patients had the obligation to pay for their expenses while in the asylum. Pauper patients were admitted after a sworn deposition about their poverty by the local priest and the mayor in front of the magistrate. Even though there are records of fines imposed for every corporal or verbal assault, the conditions in the asylum were far from being ideal.

**Discussion:** The Souda lunatic asylum provided for the mentally ill, serving as the unique establishment of its kind in the island, from the institution's opening to its deinstitutionalization in recent decades.

**S93****Psychosocial mechanisms underlying cultural differences in depressive and anxiety symptom reporting and presentation: a comparison of Greek-born immigrants and Anglo-Australians in Melbourne**

LA Kiroopoulos, S Klimidis

Department of Psychiatry, The University of Melbourne; Centre for International Mental Health, School of Population Health, The University of Melbourne; and Victorian Transcultural Psychiatry Unit, Level 2, Bolte Wing, St. Vincent's Hospital, 14 Nicholson St, PO Box 2900, Fitzroy, Victoria, 3065, Australia

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**Background:** To what extent do certain explanatory factors contribute to cultural variations in the manifestation and levels of depression and anxiety between Greek-born immigrants and Anglo-Australians? Confounding factors examined included age and socio-economic status. Explanatory factors examined included stress, trait negative affectivity, self-focused attention, impression management, illness concern, demand characteristics and stigma attributed to emotional and psychological phenomena. **Material and Methods:** Three hundred and nine subjects (mean age = 65 years) participated in the study, 158 respondents were Anglo-Australians and 151 were Greek-born immigrants recruited from Greek and Anglo-Australian social clubs in Melbourne. Respondents completed the following: Beck Depression Inventory -2, State-Trait Anxiety Inventory, Stress Scale, Self-Focused Attention Scale, Positive and Negative Affect Scale, Illness Concern Scale, Balanced Inventory of Desirable Responding and a Stigma Scale.

Greek-born participants were interviewed in their own homes due to low literacy levels and Anglo-Australians completed self-report questionnaires returned by post. All participants provided written consent after being informed about the study.

Group differences were examined using analyses of variance and covariance with the covariates being socio-economic status, sex and age. Within group hierarchical regression analyses were used to examine the relative contributions of various factors to the level of depression and anxiety.

**Results:** Greek-born subjects experienced higher levels of depression and anxiety than Anglo-Australians. Group differences were found for all explanatory variables. For the Greek-born, stress, trait negative affectivity, impression management and self-focused attention were unique predictors of the level of depression whereas lower age, stress and trait negative affectivity were unique predictors for the level of anxiety. For the Anglo-Australians, lower socio-economic status, trait negative affectivity, illness concern, lower impression management and stigma were unique predictors of the level of depression whereas trait negative affectivity, illness concern, lower impression management, self-focused attention and stigma were unique predictors of the level of anxiety.

**Discussion:** Once accounting for confounding variables, this study demonstrated differences between cultural groups in level and contribution to depression and anxiety scores of psychosocial factors that contribute to symptom augmentation/reduction.

Cultural differences in presentation of depression and anxiety may be better understood by the degree to which psychosocial processes underlying symptom experience and reporting may be differentially salient in different cultures.

**S94****Behavioural manifestations of depressive, schizophrenic and non-psychiatric patients on the ward**

T Schelde

Department of Psychiatry, Frederiksberg Hospital, Nordre Fasanvej 57, 2000 Frederiksberg, Denmark

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**Background:** Only very few quantitative studies have been carried out of the behaviour of psychiatric patients. The objective of this investigation was to conduct ethological studies of the behaviour of psychiatric patients in order to provide psychiatry with new theoretical and practical knowledge.

**Material and methods:** Eleven depressed, 11 schizophrenic, and 11 nonpsychiatric patients were observed. The observations were carried out systematically and quantitatively on the ward by means of an observation sheet including 166 detailed behavioural items. Statistics: Data were treated by nonparametric statistics.

**Results:** The following results are derived from three studies: 1) The behaviours of the first and the last hospital weeks of the depressed patients were compared. Thus depression and improvement markers could be singled out. Examples of depression markers were: high frequencies of nonspecific gaze, social withdrawal, no mouth movements, and fumbling-finger-movements. Of improvement: increased frequencies of verbal-social-initiative, talk, nod, smile, laugh, gesticulate, help, point, and give. The clinical relevance of these markers is that doctors and nurses can use them to recognize progress, stability, lability, or direct relapse in the patient's mental state. In addition, the data of this study indicated a tendency towards two subtypes of depressives: one being non-social and non-self-active, the other being non-social, but self-active. The last subtype improved at a much higher social level than the first subtype. 2) The control study revealed three findings: a) a substantial discrepancy between depressives and controls in the first hospital week 49 detailed items and six general parameters constituted the difference. The parameters were: Introvert-Eye-Fixation which showed significantly higher frequencies in depressives; Diversity (the number of different items shown per week), Activity, Receive-Social-Behaviour, Send-Verbal-Communication, and Send-Nonverbal-Communication all had significantly lower frequencies in depressives. The significance of this result is that depression is first of all a dramatic reduction of social interaction; b) from the first to the last week, controls habituated to the hospital environment by reducing their social interaction and increasing their self-activity. On the contrary, improved depressives showed a clear increase of their social interaction from first to last week. The significance of that finding is that this social increase is not a habituation to the hospital environment, but a consequence of the treatment (medicine, ECT); c) the third finding was that Verbal-Communication of the depressives in their last hospital week showed a significantly lower frequency than that of the controls. This means that the remitted depressives had not fully recovered at discharge. 3) The schizophrenics revealed a still greater discrepancy from the controls than did the depressives. The difference consisted of 48 detailed behaviours and seven parameters in the illness phase of the schizophrenics: the frequencies of Posture-Flexibility (body-mobility) and Introvert-Eye-Fixation were significantly increased in schizophrenics; Diversity, Activity, Receive-Social-Behaviour, Send-Verbal-

Communication, and Send-Nonverbal-Communication all showed significantly lower frequencies in schizophrenics. A specific feature in the schizophrenics was a certain kind of behaviours that did not occur either among controls or depressives. Examples of such unique and endemic behaviours are bizarre postures, stereotypies, talk-to-himself, smile-to-himself, laugh-to-himself, penetrating staring, distorted voice tonality, and aggression. Many schizophrenics still show these peculiar behaviours after discharge. Hereby they are easily looked upon as deviants and are therefore exposed to social isolation which is a serious handicap for these patients.

**Discussion:** Based on the above findings, it is estimated that this ethological-psychiatric investigation has provided psychiatry with knowledge of a novel and important character, both theoretically and in clinical practice.

### S95

#### **Repetitive transcranial magnetic stimulation (rTMS) in older versus younger depressed patients**

G Abraham, F Voutsilakos, R Milev  
Queen's University, Kingston, Ontario Canada

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**Background:** The aim of the study is to examine whether rTMS is associated with different rate of response in treating older and younger depressed patients. Multiple antidepressant resistant depressed patients who failed to demonstrate an antidepressant response to an adequate trial were recruited to participate in the study.

**Material and Methods:** Patients who were 65 years or older were treated openly with rTMS while continuing to take the same antidepressant for the duration of rTMS course (to avoid the risk of withdrawal). Patients younger than 60 years of age were withdrawn from their antidepressants at least two weeks before starting rTMS treatment. High frequency rTMS was administered to the Left frontal cortex for a period of 10 working days. rTMS intensity was set similarly for both groups at 110% of motor threshold and 20 trains of 10 Hz stimulation were delivered with train duration of 8 seconds at an interval of 52 seconds. Eight patients thus far have completed their treatment, as part of an ongoing investigation. Four were older than 65 years with a mean age of 73 years (range 67–80 years). Four patients were younger than 60 years of age with a mean age of 44 years (range 30–56 years).

**Results:** One of the elderly depressed patients showed partial improvement [with HAMD dropping from 27 to 14 (48%) while BDI remained unchanged during the course of treatment], while 3 showed no change in their rating scales (mean HAMD and BDI of 22 and 25 at baseline and 19 and 29 at end of study respectively). Of the five younger patients, 1 responded (with the HAMD and BDI scores dropping from 23 and 33 at baseline to 11 and 14 at end of the study respectively). A second patient showed partial improvement (HAMD dropped by 33%). The remaining 2 showed little or no change in their mood rating scores between baseline and end of study.

**Discussion:** All patients tolerated the TMS well and no evidence of worsening in their anxiety or memory scores were detected. The 1 patient that responded has been receiving bi-weekly maintenance TMS and has been doing very well for the last 9 months. In conclusion, rTMS appears to be well tolerated in both age groups. Younger depressed patients appeared to respond

better than older patients, controlled studies with larger numbers are needed.

### S96

#### **Management of behavioural and psychological symptoms of dementia: targeting specific behaviours with specific strategies**

C McDougall

Honorary Fellow University of Melbourne Department of Psychiatry, Manager Aged Psychiatry Service, St Vincents Health, Melbourne, Australia

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**Background:** Since the 1980's the interest in Behavioural and Psychological Symptoms of Dementia (BPSD) has dramatically increased and is now recognized as one of the most significant areas for research and development of treatments in Aged Psychiatry. The State of Victoria in Australia has for many years provided specialised residential care for people with psychiatric disorders of old age, who require nursing home level of care. These units house 30 resident each and at least 50% of these people display BPSD.

**Material and Methods:** The paper will review the process of admission, assessment and development of treatment plans, tailored to the individual and the individual behaviours. The structure and design of the homes as well as staffing, staff training and development and management of staff will also be examined as an integral part of the caring for these patients

**Results:** This paper will show that there has been a significant (50%) reduction of anti psychotic medication in one nursing home where the staff were trained, assessments were more diligently followed and the interior decoration of the nursing home altered to suit the resident group. It will also show, through the reduction in reported aggressive incidents, that the residents, through management with the use of individually tailored management plans have suffered less injuries, falls and other problems associated, not only with medications, but with BPSD's

**Discussion:** In the management of BPSD, an individualised care plan to match the individual as well as the specific BPSD, rather than the "one size fits all" approach in pharmacology or psychosocial interactions may be a more appropriate alternative/complementary approach.

### S97

#### **Music therapy intervention on individuals with psychological disorders. a case study**

G Kazantzis, MK Tzoannou, V Kazantzis, CH Mouzakidis, Y Theodorakis

Department of Physical Education & Sports Science, University of Thessaly, 42 100, Karyes, Trikala, Greece

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**Background:** The benefits of music therapy are emotional, psychological and physical. Current research on patients with schizophrenia showed that music therapy diminished patients' negative symptoms, increased their ability to converse with others, reduced their social isolation, and increased their level of interest in external events. The aim of this research was to study the effect of music on a middle aged patient, diagnosed with schizophrenia of the paranoid type. The implementation of the music therapy intervention aimed on the development of the

natural tendencies of the participant, as well as his psychological and physical functions so that he could be able to overcome problematic conditions and behaviors and be able to reach therapeutic response.

**Material and Methods:** An adult patient aged 49 years, diagnosed with schizophrenia of the paranoid type was engaged in this case study. The duration of the program was four months, with two 1-hour sessions per week. The present study had been conducted following the "individual - passive" technique, which is based on applying a program of music hearing, consisted of 3 different musical units. The musical pieces used in therapy interventions were played live, with the use of the below music instruments: Guitar, clarinet, flute, harmonica and Greek baglamas.

**Results:** This study confirmed the positive effects of music therapy interventions, as were already found to be recorded in the literature. The patient showed after each intervention, more zest to participate in the scheduled group activities of the Institution (such as the clay group and the cooking group). He also expressed a strong feeling of relief, and a positive mood. It was noted that through the total of music therapy interventions, the patient was lead to the reduction of his social isolation, and increase of his interest for social activities.

**Discussion:** Conclusively, music therapy can be used successfully on patients with schizophrenia but more research needs to be done, involving a greater number of patients and for a longer period of time.

## S98

### The dynamics of the involuntary admission in a psychiatric department of the general hospital K Aspradakis

Dept. of Psychiatry, Prefectural General Hospital of Volos, Greece

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**Background:** The aim of this project is the study of the statutory frame and the parameters that rule the involuntary nursing of psychiatric patients (law. 2071/92 about psychic health "venturousness and need for psychiatric treatment as a reason for involuntary nursing").

**Material and Methods:** The area the research has taken place is the Dept. of psychiatric of the G.H.V, where 117 hospitalised patients, under the district attorney's office order, were studied during the year 2002, so as to ascertain the need for involuntary nursing.

**Results:** From the total amount of the hospitalized persons 94 patients (80.3%), fulfilled the criteria of DSM-IV for schizophrenia or mania and were sent to the mental hospital of Katerini city (sectorization); 7 patients, (6%) were suffering from alcoholic psychosis, 10 patients (9%) were suffering from psychic organic disorders (senility) and 6 of them (5.2%) were psychotic with the awareness of the disease and their treatment had to be changed to voluntary and therefore received treatment in the Dept. of Psychiatry.

**Discussion:** The duration of nursing of the hospitalized by the police force patients, even with their final consent to treatment is much longer in relation to the duration of the voluntary hospitalized persons of the same diagnostic category.

Stress/depression and the evaluation of the psychopathology of the involuntary hospitalized persons is higher in comparison to the voluntary ones of the same demographics elements.

It was founded smaller comorbidity with dependence to substances to the hospitalized persons under order from the district attorney's office, compared to the voluntary hospitalized patients.

The involuntary hospitalized persons were single, middle aged, with no regular occupation, with a low supportive family environment.

Those who did not have in their case – history any former involuntary nursing in a mental hospital, exhibited better compliance to their therapy and kept satisfactory therapeutic relation-ship with the clinic after their release ticket.

## S99

### The adaptation of satisfaction with life scale in the Greek language

A Patsiaouras, CH Mouzakidis, A Pappas, M Xaritonidi  
University of Thessaly/TEFAA, 42100 Karyes, Trikala, Greece

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**Background:** The satisfaction one person feels and the various sentiments he/she experiences are very important, as they recommend an indicator for his/her sentimental condition. The purpose of this study was to assess the reliability of the Greek translation of the Satisfaction with Life Scale (SWLS)

**Material and Methods:** First Phase: The translation and the content validity of the Satisfaction with Life Scale were examined 2<sup>nd</sup> Phase: The questionnaire was completed by 36 people of mean age 67.36 (± 5.55) years, who were asked to re-answer the SWLS after a period of eight weeks, in order to the reliability of the instrument be checked. The questionnaire was constituted by six questions with regard to the satisfaction that each person feels according his/her life. It was used a 7 point Likert type scale, "Strongly disagree" (1) to "Strongly agree" (7).

The statistical analysis was carried out with the statistical software SPSS 10.0. Cronbach's  $\alpha$ , Pearson r and paired t-tests were conducted to determine if the variable "satisfaction with life" differentiated significantly between the two measurements

**Results:** High internal consistency of the factor "satisfaction with life" was observed in the first as well in the second measurement (Cronbach's  $\alpha=0.9307$  and Cronbach's  $\alpha=0.6330$  respectively). The correlation coefficient between the two measurements showed a rather strong relationship (Pearson  $r=0.627$ ) of the factor examined

**Discussion:** The Greek translation of SWLS can be used as an instrument in the evaluation of satisfaction that a person feels for his/her life, mainly persons of third age, but further research is necessary.

## S100

### Anxiety disorders evaluation in a mental health center

E Panagoulas, P Papadopoulos  
Mental Health Center of Peristeri, Athens, Greece

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**Background:** The aim of this study was to investigate the treatment strategies and final outcome of our patients with "anxiety disorders".

**Material and Methods:** We studied retrospectively the files of all new clients who visited our Center within a period of one year. From this group we chose those patients who were diagnosed as

“anxiety disorders” (DSM-IV) and had at least three appointments with us (n=76, Males=18, Females=58). We examined parameters such as: age, marital status, previous contacts with psychiatric services, type of therapeutic intervention and outcome.

**Results:** From the results we mention: a) the rate between women and men was about 3:1, b) 60.5% were less than 40 years old, c) 63.2% were married, d) 64.5% had a contact with other psychiatric service in the past and e) 28.9% had been treated with drugs, 24.7% with psychotherapy and 26.3% with combination of them, while the rest 17.1% dropped out. Finally, f) 46% had significant improvement and 53% some to average improvement.

**Discussion:** Despite the impression that in MHCs the mainly approach is psychotherapy, the above findings show that in our Center the therapeutic means for anxiety disorders varies depending on patients needs and the outcome could be considered positive.

### S101

#### Effects of dopaminergic agonists on prepulse inhibition of the startle reflex in man

SG Giakoumaki, K Theou, K Kanavouras, P Bitsios  
Department of Psychiatry & Behavioural Sciences, Faculty of Medicine, University of Crete, Heraklion, Crete, Greece

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**Background:** The startle reflex is inhibited when the startling eliciting stimulus is preceded by a weak prepulse in the same or different modality. This phenomenon is termed Prepulse Inhibition (PPI) of the startle reflex and is used as a cross-species operational measure of sensorimotor gating functions, which normally prevent the organism from overload of information. PPI is equally disrupted in patients with schizophrenia spectrum disorders, and in experimental animals with central dopamine activation caused by drugs, which facilitate dopaminergic neurotransmission and this disruption is reversed by neuroleptics. The few human PPI studies with dopaminergic drugs, have produced inconsistent results so far: Bromocriptine was found to disrupt PPI or to have no effect, while pergolide and amantadine had no effect. In this study we report in three separate experiments, the effects of pergolide, amantadine and ropinirole, all of which are drugs with known dopaminergic neurotransmission facilitatory properties.

**Material and Methods:** In Experiment 1, 12 healthy male volunteers (21–29 years) participated in 3 sessions, in which they received pergolide 0.05 mg, pergolide 0.1 mg and placebo. In Experiment 2, 12 healthy males (20–31 years) received ropinirole 0.25 mg, ropinirole 0.5 mg and placebo and in Experiment 3, 16 healthy males (20–28 years) were administered amantadine 100 mg, amantadine 200 mg and placebo. In all 3 experiments subjects were allocated to sessions and treatments according to a balanced, crossover, double blind design. In all 3 experiments electromyographic responses of the orbicularis oculi muscle were recorded for 17 min, at 2, 1.5 and 3 hours after treatment for each experiment respectively. The startle testing session consisted of a block of 5 pulse-alone stimuli at the beginning and at the end of the 17 min recording, for the assessment of baseline startle and startle habituation. In between these blocks, subjects received 42 trials of pulse-alone and prepulse-pulse stimuli. Pulses comprised 115 dB, 40 msec bursts of white noise and prepulses were 75 and 85 dB, 20 msec bursts of white noise with prepulse-pulse intervals of 30 and 60 msec. Pulse-alone and prepulse-pulse

trials were presented in a pseudorandom order at an inter-trial interval averaging 15 sec.

**Results:** For each separate experiment, baseline startle was analysed by 2-way repeated measures ANOVA (treatment × block). %PPI data were analysed by 3-way repeated measures ANOVA (treatment × prepulse × prepulse-pulse interval). Pergolide but not amantadine or ropinirole reduced baseline startle in a dose-dependent manner but did not affect startle habituation. The analysis of the %PPI data showed significant main effects of prepulse (p<0.005) and interval (p<0.05) in the case of pergolide and amantadine but no main effect of treatments or interactions. There was a trend for amantadine to increase PPI. Ropinirole 0.5 mg decreased %PPI at the 60 msec inter-stimulus interval for both 75 and 85 dB prepulses, as confirmed by a statistically significant treatment × interval interaction (p<0.05).

**Discussion:** The different mechanisms of action of the three drugs may be responsible for the success of ropinirole (a selective D<sub>2</sub> agonist) and the failure of pergolide (a D<sub>1</sub> and D<sub>2</sub> agonist) and amantadine (presumably an indirect dopamine agonist and an uncompetitive NMDA antagonist) to reduce PPI. These findings suggest, in agreement with pre-clinical studies, that PPI in humans is modulated through the D<sub>2</sub> subtype of dopamine receptors.

### S102

#### Fear-inhibited light reflex: effects of peripheral sympathetic blockade with dapiprazole eye-drops

E Hourdaki, SG Giakoumaki, V Grinakis, K Theou, P Bitsios  
Department of Psychiatry & Behavioural Sciences, Faculty of Medicine, University of Crete, Heraklion, Crete, Greece

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**Background:** Fear conditioning (e.g., by the threat of an electric shock) causes an increase in initial pupil diameter, and a decrease in the amplitude of the light reflex response (“fear-inhibited light reflex”). There is evidence for dissociation between the two responses to threat, suggesting that while the effect on the light reflex response involves central inhibition of the parasympathetic, the effect on initial pupil diameter may reflect more preferentially, the activation of the sympathetic. We examined the effects of peripheral sympathetic blockade with the  $\alpha_1$ -antagonist dapiprazole on both responses to threat on the basis of the hypothesis that only the response of the initial pupil diameter will be affected, while the response of the light reflex will remain unaffected.

**Material and Methods:** 12 healthy volunteers (6 male, 6 female) aged 20–25 years participated in one experimental session. Dapiprazole (2 × 20  $\mu$ l of a 0.5% solution, repeated 3 times at 5 min intervals) was instilled in subjects’ right or left eye while the contra lateral eye was treated with placebo eye drops (artificial tears) according to a single blind, balanced, cross over design. Pupil diameter was monitored in the dark, in dark-adapted eyes by an infrared binocular television pupillometer (PROCYON 2000D). During the 105–120 min window following instillation, the light reflex was elicited with weak (0.35 cd/m<sup>2</sup>, 200 msec) light stimuli on the placebo-treated eye only, and the response was recorded from both eyes. There was a total of 6 blocks of 3 light stimuli each, and the average of the 3 elicited light reflexes was taken as the response of a block. Responses in each block were recorded under either safe (S) or threat (T) condition; the two conditions alternated regularly. “T” blocks were associated with the

anticipation of an electric shock, although no such shock was in fact administered at any point during the session. At the end of each S and T block, subjects self-rated their mood and feelings on Visual Analogue Scales.

**Results** Dapiprazole caused a significant miosis evident at 30 min from instillation and reaching its peak at 90 to 105 min. Threat of shock was associated with significant increases in subjectively rated "anxiety" and "alertness", significant increase in initial pupil diameter in both eyes and a significant decrease in the amplitude of the pupillary light reflex response in both eyes. The dapiprazole- and placebo-treated eyes differed significantly only in the levels of initial pupil diameter in the safe as well as the threat conditions. Between-eye comparisons (dapiprazole- vs placebo-treated) of the effect of threat (Safe-Threat subtractions) on the pupillary measures, showed that dapiprazole treatment did not change the effect of threat on any of the two pupillary measures.

**Discussion:** The effect of threat on the light reflex response is unlikely to involve the peripheral sympathetic innervation of the iris. Although it is possible that the effect of threat on initial pupil diameter was reduced by dapiprazole, this effect might have been masked by the removal of a ceiling effect due to reduction in baseline pupil diameter.

### S103

#### **Fear-inhibited light reflex: effects of conditioned stimulus intensity and fear stimulus modality**

E Hourdaki, SG Giakoumaki, A Armenaki, K Theou, V Grinakis, P Bitsios

*Department of Psychiatry & Behavioural Sciences, Faculty of Medicine, University of Crete, Heraklion, Crete, Greece*

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**Background:** Fear conditioning (e.g., by the threat of an electric shock) causes an increase in initial pupil diameter, and a decrease in the amplitude of the light reflex response ("fear-inhibited light reflex"). Studies of the fear-inhibited light reflex have always assumed that the conditioned stimulus (a low intensity acoustic tone) has no effect in itself, on any of the two pupillary responses to threat. Furthermore, these studies have uniformly employed a standardised light intensity as the unconditioned stimulus while for fear conditioning, they have always employed the association of the conditioned stimulus to a potentially painful tactile electric shock. The aim of this parametric study was to examine the role of conditioned stimulus, light intensity and fear stimulus modality in the mediation of the fear-inhibited light reflex.

**Material and Methods:** 16 healthy male volunteers aged 20–25 years participated in one experimental session. Pupil diameter was monitored in the dark, in dark-adapted eyes by an infra-red binocular television pupillometer (PROCYON 2000D). The experimental session consisted of three parts, and each part comprised six identical blocks of four 200 ms light stimuli (0.35, 5, 50 and 140 cd/m<sup>2</sup>). In Part 1, responses in each block were recorded under either the presence or the absence of a continuous low intensity acoustic tone, in an alternating fashion. In this part, the presence of the acoustic tone was not associated with any threat. In Parts 2 and 3, responses in half the blocks were recorded under the presence of the same continuous low intensity acoustic tone, which was associated with the anticipation of an electric shock (threat of shock – "Tsh" blocks) in Part 2, and with the anticipation of a sound blast (threat of sound blast – "Tsb" blocks) in Part 3. The remaining half of blocks in Parts 2 and

3, were recorded under the absence of the acoustic tone (safe condition – "S" blocks); "S" and "Tsh" blocks in Part 2 and "S" and "Tsb" blocks in Part 3 alternated regularly. No shocks or sound blasts were in fact administered at any point during the session. At the end of each S, and Tsh or Tsb block in Parts 2 and 3, subjects self-rated their mood and feelings on Visual Analogue Scales.

**Results:** Part 1: the presence of the acoustic tone did not affect the light reflex response amplitude across all four light intensities but it was associated with a trend for an increase in initial pupil diameter. Parts 2 and 3: "Tsh" and "Tsb" blocks were associated with significant increases in initial pupil diameter and subjectively rated "anxiety" and "alertness", and a decrease in the amplitude of the pupillary light reflex response across all light intensities, the threat of shock being more potent in effecting the pupillary results. Calculation of the effect of threat (safe-threat subtractions) on light reflex amplitude and subsequent analyses of these derived data with 2-way ANOVAs (fear stimulus modality and light intensity as the within-subject factors), revealed a significant main effect of light intensity but no significant interactions.

**Discussion:** These results suggest that the conditioned stimulus per se does not modify the light reflex response unless it is associated with a fear stimulus (threat). The fear-inhibited light reflex is independent of the modality of the fear stimulus and may be sensitive to variations in the amount of fear induced by different fear stimuli (threats). Finally, these results suggest that the manifest effect of threat on light reflex amplitude is greater, with increasing light intensity.

### S104

#### **The 2A and the 1B serotonin receptor genes as candidate genes of suicidal behavior**

D Gaysina, E Juryev, E Khusnutdinova

*Institute of Biochemistry and Genetics of Ufa Scientific centre of RUS*

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**Background:** Several lines of evidence suggest that suicidal behavior has a genetic component. Low serotonergic activity is associated with suicidal behavior. Alterations in binding kinetics of 2A (HTR2A) and 1B (HTR1B) serotonin receptors are reported postmortem in the brain of suicide victims compared with nonsuicides. So, HTR2A and HTR1B genes are the main candidate genes of suicidal behavior. The aim of our investigation is to examine the relationships of attempted suicide with A-1438G polymorphism of HTR2A gene and G-861C polymorphism of HTR1B gene.

**Material and Methods:** Genotype and allele frequencies of these polymorphisms in 188 suicide attempters and 272 healthy voluntaries were examined by polymerase chain reaction – restriction fragment length polymorphism (PCR–RFLP).

**Results:** We have found significant differences in the HTR2A genotype ( $\chi_2=7.28$ ,  $p=0.0021$ ) and allele ( $\chi_2=5.21$ ,  $p=0.0028$ ) distribution between suicidal group and controls. There was significant increase of A allele (OR=1.36, 95% CI=0.04–1.79) and decrease of genotype GG (OR=0.6, 95% CI=0.38–0.95) in group of suicide attempters in comparison with controls. Significant differences were also found in the HTR1B genotype ( $\chi_2=10.91$ ,  $p=0.005$ ) and allele ( $\chi_2=9.39$ ,  $p=0.003$ ) between two comparable groups. Genotype GG (OR=1.9, 95% CI=1.26–2.89) and allele G (OR=1.58, 95% CI=1.17–2.14) are risk (OR=1.9, 95% CI=1.26–2.89) for suicide attempts.

**Discussion:** This study suggests that these polymorphisms may contribute to suicidal behavior.

### S105

#### The impact of depression and antidepressant treatment on motor function of patients with idiopathic Parkinson's disease

S Papapetropoulos<sup>1</sup>, J Ellul<sup>1</sup>, E Chroni<sup>1</sup>, NP Lekka<sup>2</sup>

<sup>1</sup>Department of Neurology, University of Patras Medical School, Patras, Greece; <sup>2</sup>Department of Psychiatry, University of Patras Medical School, Patras, Greece

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**Background:** Depression affects approximately 40% of patients with Parkinson's disease (PD). We aimed to evaluate the impact of depression on motor function of patients with idiopathic Parkinson's disease (IPD).

**Material and Methods:** Thirty-two IPD patients with major depression (IPD-D) were matched for age, sex, age of disease onset and duration of disease with 32 non-depressed IPD patients (IPD-ND). Depression was diagnosed using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I). The Unified Parkinson's Disease Rating Scale (UPDRS) was completed during clinical examination. Motor function was evaluated using the sum of items scores related with tremor, rigidity, bradykinesia and axial impairment, as well as the motor UPDRS subscale score (UPDRSm).

**Results:** The mean UPDRSm score was significantly higher in the IPD-D group compared with the IPD-ND group ( $33.7 \pm 18.8$  vs  $22.7 \pm 18.3$ ,  $p=0.01$ ). Rest tremor and rigidity did not differ between groups. Within the IPD-D group, patients not receiving antidepressant therapy scored higher in the UPDRSm, and had more bradykinesia and axial impairment compared with their matched controls, whereas patients receiving antidepressant therapy showed no difference in the motor function compared with their matched controls.

**Discussion:** Idiopathic Parkinson's disease patients with major depression had worse motor function compared with those with no depression. Depressed IPD patients receiving antidepressant treatment showed no difference in motor function compared with non-depressed IPD patients. Therefore, we suggest that all PD patients should be evaluated for depression and commence antidepressant treatment if indicated.

### S106

#### Group therapy in patients in a mobile psychiatric unit of care in countryside

I Segredou, G Skartsila, E Moustafa, P Sakellaropoulos  
Company of Social Psychiatric and Mental Health, Department of Komotini

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**Introduction:** Group therapy is a form of psychotherapy, which includes two or more patients and one or more therapists, that meet regularly, in a determined place, for long period of time and aims at the improvement of patient's symptoms, the change in their disadaptable behaviors and comprehension of their sentimental situation. In this project we try to investigate the help that group therapy can offer to the quality of life of patient and more specifically of psychotic patients, so that their functionalism is restored, their self respect is increased and feeling of acceptance acquired.

**Materials and Methods:** In 13 psychotic patients that participate in two therapeutic groups, that take place in the Mobile Psychiatric Unit of Care of Countryside, Company Social Psychiatric and Mental Health, in the capital of prefecture Rodopi, Komotini, were tested the improvement of social dexterities, the responsibility, the interpersonal communication, the self-esteem and their self-confidence and the progress of their symptoms. Three measurements of the above parameters took place. The first one before their integration in the groups, the second, six months afterwards and the third 18 months afterwards. As measurement tools were used the questionnaire of social Functionalism of Paul Clifford and Isobel Morris and the Brief Psychiatric Rating Scale (BPRS). The statistical analysis of results became with the method of t-paire test.

**Results:** From the 13 patients, that were selected to participate in the two therapeutic groups, for the last 1.5 year, four of the members withdrew prematurely. At the remaining members the improvement of examined parameters was found statistically important after their first half-year period of attendance in the groups (1st-3rd measurement on average  $p \approx 0,00003$ )

**Discussion** Group therapy offers rebuttal of feeling of uniqueness of patient, this only is a powerful source of alleviation. The feelings of indisposition and disability, deep loneliness and isolation are decreased, knowledge in the mental illness, the symptoms and interpersonal dynamic is acquired and, with the help that each member offers to other members, each and everyone of them feels useful and essential to the other.

### S107

#### CPKM in acutely admitted psychiatric patients

K Kosmopoulou, E Konstantinou, P Kanellos  
Psychiatric Department, Agia Olga General Hospital, Athens, Greece

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**Background:** Creatine Kinase – muscular subtype (CPKM) is a sensitive and reliable index of degree of rhabdomyolysis, a potentially serious medical problem, sometimes leading to acute renal failure.

**Material and Methods:** Trying to determine rhabdomyolysis frequency, factors related, effective therapeutic measures and outcome, we screened all acutely admitted patients, the next after the admission day, as to their CPKM level and monitored those with abnormally elevated values. The patients studied consisted of a total of 527 subjects, 245 female and 282 male, aged 18 years to 88 years (mean 44 years), suffered 265 (50.3%) from psychotic disorders, 207 (39.4%) from affective disorders and 55 (10.3%) from other disorders.

**Results:** CPKM >250 IU/L was found in 148 of the patients (28%), CPKM >1.000 IU/L, that is four times the upper physiological value, in 62 (11.7%) and CPKM >10.000 IU/L in 3 (0.6%).

Agitation, male gender, previous intramuscular injections, abnormally low potassium, abnormal high urea and creatinine were significantly related to rhabdomyolysis ( $p < 0.05$ ), in patients with CPKM >1.000 IU/L.

Patients with CPKM >250 <1.000 IU/L just monitored.

For those with CPKM >1000 IU/L therapeutic measures included neuroleptics dose reduction in 78.3%, switch parenteral to oral medication in 65.2%, restoring fluid and electrolyte imbalance in all patients.

Return to normal CPKM values was within 5 to 20 days.

In one case rhabdomyolysis was massive with CPKM >100.000 IU/L, a severe acute renal failure developed in 24 hours, and patient died in a nephrologic unit three days later.

**Discussion:** Abnormally increased CPKM, rhabdomyolysis' index, seems common in acutely admitted psychiatric patients. Given the associated risk of acute renal failure, rhabdomyolysis must be monitored and treated.

### S108

#### Impact of alcohol use and its related disorders at work in relevance with family history of alcoholism

K Sitzoglou<sup>1</sup>, K Papadopoulou<sup>1</sup>, J Tsipsios<sup>1</sup>, C Charalampous<sup>2</sup>, A Androutsos<sup>1</sup>, M Adamopoulou<sup>1</sup>

<sup>1</sup>Department of Clinical Neurophysiology, Mental Hospital of Thessaloniki; <sup>2</sup>Department of Internal Medicine Clinic, Mental Hospital of Thessaloniki

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**Background** This study was performed to investigate the impact of alcohol use and its related disorders at work according to people with alcohol dependence, alcohol abuse and those that are rehabilitated. Additionally, the genetic component of heritability in alcoholics was encountered. Finally, an overall evaluation of quality of life was screened.

**Material and Methods:** The assistant key of our investigation was the questionnaire-31 adjusted in the pattern of alcoholism and in the special parameters of the Hellenic culture. The sample was consisted of n=75 suffered from alcoholism (men=60, women=15) either treated for somatic or mental detoxication. The mean use of alcohol was 21 ± 8.9 years and 11 ± 5.2 years for the men and the women group respectively. The subjects were questioned during their hospitalization for the somatic detoxication. Furthermore the sample was examined once more after a period of six months and one year. In both cases, it was analyzed their financial and their employment status.

**Results:** More affected people were the subjects that they did not manage to be treated successfully (n=44). They were unemployed or they have presented a high degree of underemployment. Moreover, the most affected people were those that have presented positive family history of alcoholism (n=21). It is the other way round for those that were treated effectively, that is relative occupational steadiness (n=17). 15 subjects have negative family history of alcohol among them). 13 subjects did not follow the study protocol.

**Conclusions:** It is obvious that alcohol use and its related disorders have a great impact at work. Joblessness implies lack of productivity with severe financial and social consequences. People with alcohol abuse even after treatment construct a group from which family and gregarious problems originate constantly. On the contrary, detoxicated people discontinue to be an obstacle to social functioning. They present a higher degree of self-esteem, of emotional stability and of occupational steadiness too.

### S109

#### Suicidal intention, depression and anhedonia among suicide attempters

KG Pappos, VP Kontaxakis, BJ Havaki-Kontaxaki, AD Rabavilas  
Department of Psychiatry, University of Athens, Eginition Hospital, Athens, Greece

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**Background:** Suicidal behaviour is widely accepted as part of the clinical phenomenology of depression. There is evidence that

anhedonia is related to chronic suicide risk. The present study aims to examine possible relationships between suicidal intention and depression or/and anhedonia in suicide attempters.

**Material and Methods:** The sample consisted of 31 patients (female 77%) with a mean age of 34.1 (± 14.1) years, consecutively admitted to a general hospital, in Athens, after they attempted suicide. Suicidal intention was assessed by the Beck Suicide Intent Scale (SIS). Depression was assessed by the Montgomery-Asberg Depression Rating Scale (MADRS). Anhedonia was measured using the item 8 (inability to feel) of the MADRS. For the statistical evaluation Spearman's rank correlations coefficients were used.

**Results:** The mean SIS score of the attempters was 12.9 (± 3.8) while the mean MADRS score was 35.1 (± 8.8) and the mean anhedonia score was 4.1 (± 0.9). We found significant correlations between mean SIS score and both MADRS score (r=0.67, p<0.01) and anhedonia score (r=0.59, p<0.01).

**Discussion:** The results of the study suggest that suicidal intention in suicide attempters is positively correlated to both depression and anhedonia.

### S110

#### Social anhedonia and depressive symptoms in patients with acute schizophrenia

VP Kontaxakis, KT Kollias, BJ Havaki-Kontaxaki, SS Stamouli, GN Christodoulou

Department of Psychiatry, University of Athens, Eginition Hospital, 74 Vas. Sophias Avenue, 11528 Athens, Greece

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**Background:** Social anhedonia (SA) represents a defect in the ability to experience interpersonal pleasure. It is impaired in both schizophrenia and depression. The aim of this study is to evaluate the association of SA to depressive symptoms in a sample of acute schizophrenic patients.

**Material and Methods:** Seventy-one schizophrenic patients (45 men, 26 women) with a mean age of 30.2 (± 8.5) years, consecutively admitted at Eginition Hospital, Athens, were included in the study. Patients were assessed on admission using the Revised Social Anhedonia Scale (rSAS) and the Calgary Depression Scale for Schizophrenia (CDSS). For the statistical evaluation Spearman's product moment correlations were carried out.

**Results:** SA ratings did correlate with total CDSS score (r=0.29, p=0.02). Regarding depressive symptoms, there were significant correlations between rSAS score and the CDSS item scores of self-depreciation (r=0.36, p=0.004), pathological guilt (r=0.40, p=0.001), early wakening (r=2.70, p=0.03), suicidal thoughts (r=0.31, p=0.01), observed depression (r=0.32, p=0.01).

**Discussion:** There is an association between SA and several depressive symptoms in patients with acute schizophrenia.

### S111

#### Psychiatric trainees' opinions toward novel antipsychotics

BJ Havaki-Kontaxaki, VP Kontaxakis, KG Pappos, D Katritsis, AD Rabavilas

Department of Psychiatry, University of Athens, Eginition Hospital, 74 Vas. Sophias Avenue, 11528 Athens, Greece

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**Background:** The aim of this study is to investigate opinions and prescribing practices towards atypical antipsychotics (AA) among psychiatric trainees in Greece.

**Material and Methods:** A study of a convenience sample of Greek psychiatric trainees (n=160) was conducted, in 2001. Their mean age was 32.8 ( $\pm$  2.7) years. There were 82 male (51%) and 78 female (49%). 111 trainees (69%) were working at National Health System and 49 (31%) at University Departments. All respondents completed a 10-items questionnaire that measures opinions and prescribing practices toward novel antipsychotics.

**Results:** The most often used AA were: risperidone (98.7%), olanzapine (98.1%), clozapine (79.2%), quetiapine (61.0%), sertindole (1.9%). Ziprasidone and amisulpride were not yet available in Greek market during the study time period. Combination therapy with atypical and conventional antipsychotics (63.3%) as well as monotherapy with atypical antipsychotics (24.1%) were considered as treatments of choice for treatment resistant schizophrenia (TRS). The AA more often used as monotherapy in treatment resistant schizophrenia were clozapine (72.5%), risperidone (18.1%) and olanzapine (8.8%).

**Discussion:** The most commonly used AA were risperidone and olanzapine. Clozapine monotherapy as well as combination therapy with atypical and conventional antipsychotics were considered as treatments of choice for TRS.

### S112

#### Medical students' attitudes on euthanasia and physician-assisted suicide: sex differences

Bj Havaki-Kontaxaki<sup>1</sup>, VP Kontaxakis<sup>1</sup>, KG Paplos<sup>1</sup>, F Siannis<sup>2</sup>, GN Christodoulou<sup>1</sup>

<sup>1</sup>Department of Psychiatry, University of Athens, Eginition Hospital, Athens, Greece; <sup>2</sup>MRC Biostatistics Unit, Institute of Public Health, University Forvie Site, Robinson Way, Cambridge CBZ, UK

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**Background:** Data available among medical students, on euthanasia (EUT) and physician-assisted suicide (PAS) are scarce. The aim of this study is to establish differences in attitudes on EUT and PAS between men and women final year medical students in Athens.

**Material and Methods:** We translated, adapted and modified, in a short version, the questionnaire developed by Ganzini on EUT and PAS. The Greek version of the questionnaire consisted of 26 items. Consecutive series of final year medical students completed the questionnaire in the presence of members of the research team. The survey was anonymous.

**Results:** 251 students (55% women) completed the questionnaire. Their mean age was 24.7 ( $\pm$  1.8) years. 52 % and 70% of the respondents were for the acceptance of EUT or PAS, respectively. There were no statistically significant differences between men and women in most of the parameters studied. However, more men than women were in favor of the view that PAS may be morally acceptable under circumstances (65% vs 57%,  $p=0.03$ ) and that a request for PAS from a terminally ill patient is evidence of existence of a mental disorder (27% vs 13%,  $p=0.01$ ). In contrast, more women than men strongly agreed that religious belief deter physicians from facilitating a patient's death (43% vs 33%,  $p=0.003$ ) and that, the risk that PAS might be misused with certain disadvantaged groups could influence the respondent view on the issues of EUT or PAS (98% vs 92%,  $p=0.01$ ).

**Discussion:** Gender is considered as a factor differentiating attitudes on EUT and PAS among final year medical students.

### S113

#### Mental disorders and dual diagnosis in a sample of homeless people in Athens

G Konstantakopoulos, I Kakoulas, V Valma, E Stamatogiannopoulou, O Giotakos, K Katsadoros  
LIMAKA – Support center for homeless, Athens

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**Background:** Many studies in different big cities around the world have shown until today a high prevalence of mental disorders and dual diagnosis (major mental disorder and alcohol or drug abuse) among homeless people. So far very little are known regarding mental health of the homeless in our country, where homelessness is a new phenomenon, which continually expands. The purpose of the study is a first record of mental disorders that are observed among the homeless in Athens.

**Material and Methods:** The study is done within Klimaka's Care Program for homeless. We present the first evidence that were gathered during the period April 2001 until April 2002. 58 people, who are users of the Homeless Support Center, 51 male and 7 female, between 20 to 67 years old, were examined by a psychiatrist.

**Results:** Based on the diagnosis (DSM-IV) the following evidence on the board came up.

Table 1

Mental Disorders	n	%
Psychotic Disorders	19	32.7
Affective Disorders	7	12.1
Anxiety Disorders	5	8.6
Personality Disorders	10	17.2
Dementia	2	3.4
Drug Abuse	11	18.9
Alcohol Abuse and related dis.	13	22.4
Without symptoms	8	13.8

We have to take into consideration, that this particular program is not referred to addicted people. The incidences of drug or alcohol abuse belong to "dual diagnosis" category.

**Discussion:** This evidence pleads for the high prevalence of mental disorders among the homeless people in Athens. The prevalence of specific disorders, especially of psychotic disorders, are seem to approach or even overcome those of the homeless in big cities of the west Europe and the U.S.A. Although we are not referred to a fair sample of the people, these findings support the argument that the international dialog regarding the intervention of the mental health among the homeless concerns our country too.

### S114

#### Quality of life questionnaire for socially excluded groups

K Chronopoulou, K Ntaliou, I Kakoulas, E Linou, K Katsadoros  
KLIMAKA – Day center for Greek Muslim, Day center for ROM

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**Background:** Quality of life covers life as a whole but also all its aspects. It is determined as the sought total satisfaction by a

number of factors with strong accent in the well-being. The other aspects usually constitute the social activity of individuals, the economic situation, the activities of free time, the conditions of work and income, the appearance of illness or not in the daily life, the harmonics interpersonal relations, the satisfaction from the place living and the potential indications of anxiety or stress. The creation of this questionnaire intends to study the profile of well-being and quality of life in social teams that experience social exclusion and it has as final objective the contribution in programs of intervention in communities that seek to upgrade of quality of life of their residents.

**Material and Methods:** The questionnaire that was created is based on the opinion that the quality of life requires various cells that function effectively and balanced. Aspects of quality of life are the subjective feeling, which includes satisfaction from life, the self-esteem and well-being, and the objective cell which includes the parameters of income, work and accommodation. It is considered as important to study these two factors, as in the socially excluded teams particularities exist which create difficulties in the comprehension of what they experience and how they deal with it. For the creation of the particular questionnaire the GHQ-12 was used and a constructed questionnaire of 79 questions.

In especial, the economic situation of residents is examined, the cultural status, their relation with the state, the community as a place to live and as political community and the general situation of mental health of individuals. Finally, questions are included that concern demographic characteristics of individuals.

**Results:** The questionnaire of quality of life was granted as pilot in the community of Rom at Zefiry. The study is underway

**Discussion:** This tool will give a picture if how the local society seeks the quality of life, what is important for the residents, as well as, the weaknesses or the strong points of community.

### S115

#### Parenting in women from different cultural groups

K Ntaliou, A Lorentzou, M Tsafou, V Valma, G Konstantakopoulos, O Giotakos

KLIMAKA- Day Center for ROM, Zefiri - Menidi

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**Background:** The social discrimination and its dimensions is a factor correlated with the development of mental health symptoms. Surveys made in general population reveal that dysfunctional parenting is related to the expression of psychopathology. According to our assumption, a) there are differences in parenting among cultural groups, b) social discrimination plays a significant role in the development of dysfunctional parenting, c) social discrimination and dysfunctional parental style experienced in childhood form psychopathological symptoms. This pilot study aims to investigate the first hypothesis using the Measure of Parental Style (MOPS) in order to determine differences in parenting in three cultural groups, which live in the same community.

**Material and Methods:** The sample consists of 98 women between 18 and 40 years, who live in Zefiri, Attica. 65 of them (66%) are Rom and 33 (33.7%) non-Rom. Among Rom group, 34 women (34.7%) call themselves "tzigane" and 31 (31.6%) "roundari" (it is supposed that they came from Romania to Greece during the last century). The second sub-group has better standard of living and quality of life than the first sub-group. The Measure of Parental Style covers three dimensions:

indifference, overcontrol and abuse from both parents, during childhood and adolescence.

**Results:** Parental abuse is more frequent among "tziganes" in comparison to "non-tziganes". Maternal abuse is more frequent among "tziganes" and "roundari" in comparison to "non-tziganes". Maternal indifference is more frequent among "roundari". Maternal overcontrol is more frequent among "roundari".

To summarize, among "tziganes" appears that maternal and paternal abuse are statistically significant in cross group comparison, while among "roundari" are maternal indifference, abuse and over control.

**Discussion:** The results confirm the first part of the assumption, which suggests differences in parenting among cultural groups and therefore it is suggested the investigation of the rest assumptions in the future.

### S116

#### Social representations of mental illness in Leros Island

V Valma, A Tempeli, E Sakellari, V Langari, A Loretzou, M Tsafou, G Konstantakopoulos

KLIMAKA – Department of Research and Development

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**Background:** The social representation functions like an interpretative system of the reality and rules the relations of people with their physical and social environment. The representation is an action guide that directs behaviors and practices. Future workers of Klimaka's boarding houses were trained for two weeks at the Psychiatric Hospital of Leros. During this period they contacted a research trying to investigate how the residents feel about all those changes that occurred at the hospital during de-institutionalization and how they feel about the reality that patients live now among them in the community. One additional aim of this research was to place these future workers in a research activity and to make them think about possible problems they may have to face when they go to work.

**Material and Methods:** The main instrument for this research was a very simple questionnaire. Particularly for the study of social representation there was an open question in the questionnaire of free associations. Subjects were asked "what comes in your mind when you hear about mental illness". This method allows the emersions of unsaid elements, which may be obscured behind verbal derivations that arise from discussions. The analysis is based on Verges (1987) methodology that uses three indicators to decide for the core and the peripheral elements of the social representation: the frequency of a topic in the population, the appearance order in the free association, and its importance for the asked subjects.

**Results:** In the core of the representation we found the elements: Psychiatric Hospital, problem, medication and fear. Peripheral elements are: need for care, love, fear, madness, sickness, sadness, schizophrenia, sorrow and others that appeared less frequent in these free associations. The core elements are the most stable and tough elements of the representation, the ones that assure its duration when the representation stands in moving and evolutionary frames. The core elements are purely social and connected with historical, sociological and ideological assumptions. The peripheral elements are the main content of the representation, the most accessible part, the most vivid and most specific.

**Discussion:** These elements contain gathered informations, selected and interpreted, formed judgments about the object and its context, stereotypes and reliance. First of all they are behavioral ethics and attitudes of the subject.

### S117

#### **Influence of anxiety and depression on nicotine dependence**

C Kalaitzi<sup>1</sup>, A Mariolis<sup>2</sup>, D Zeibekis<sup>2</sup>, A Kalantzis<sup>3</sup>, T Mylonaki<sup>1</sup>, C Christodoulou<sup>1</sup>, C Alexandropoulos<sup>1</sup>  
<sup>1</sup>Athens' General Hospital "G. Gennimatas", Psychiatric Department, Greece; <sup>2</sup>General Practitioner, Greece; <sup>3</sup>Athens' General Hospital "G. Gennimatas", Urological Department, Greece

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**Background** The aim of our study was to assess nicotine dependence in 18-years-old high school students, as well as to investigate and correlation between nicotine dependence, on the one hand, and anxiety (trait- state anxiety) and depression, on the other.

**Material and Methods:** Using the technique of stratified sampling, 112 high school students, aged 18 years old and residing the region of Pireus, were recruited. These subjects filled up the following scales: STAI questionnaire on anxiety, CES-D on depression and Fagestrom scale on nicotine dependence, as well as information concerning their height and body weight. Statistical analysis was done using SPSS 10.0 software.

**Results:** Of the aforementioned sample, 58% defined themselves as "smokers". Mean score on Fagestrom nicotine dependence scale (1=min, 9=max) was 4.66 (SD 1.46), while of those self-defined as "smokers", a mere 11.7% scored below 4 on Fagerstrom scale, that is they were not dependent on nicotine. Mean score in trait anxiety subscale of the STAI ( $53.09 \pm 3.32$ ) was significantly higher in smokers ( $p < 0.001$ ), comparing to non-smokers ( $48.45 \pm 3.96$ ). Statistically significant difference between smokers and non- smokers was also demonstrated for state anxiety ( $51.15 \pm 3.47$  compared to  $48.04 \pm 4.18$ ,  $p = 0.001$ ).

On the contrary, no statistically significant difference was noted in CES-D scores ( $p = 0.901$ ).

**Discussion:** The degree of nicotine dependence correlates well to trait anxiety and, to a lesser extent, to state anxiety, while nicotine dependence seems to be independent of depression.

### S118

#### **Anxiety, depression and nicotine dependence: correlations to BMI**

C Kalaitzi<sup>1</sup>, A Mariolis<sup>2</sup>, D Zeibekis<sup>2</sup>, A Kalantzis<sup>3</sup>, T Mylonaki<sup>1</sup>, C Christodoulou<sup>1</sup>, C Alexandropoulos<sup>1</sup>  
<sup>1</sup>Athens' General Hospital "G. Gennimatas", Psychiatric Department, Greece; <sup>2</sup>General Practitioner, Greece; <sup>3</sup>Athens' General Hospital "G. Gennimatas", Urological Department, Greece

*Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S118*

**Background:** The aim of this study was to investigate the relationship between Body Mass Index (BMI) and depression, anxiety and nicotine dependence in 18-year-old high school students.

**Material and Methods:** Using the technique of stratified sampling, 112 high school students, aged 18 years old and residing

the region of Pireus, were recruited. These subjects filled up the following scales: STAI questionnaire on anxiety, CES-D on depression and Fagestrom scale on nicotine dependence, as well as information concerning their height and body weight. From the afore-mentioned data, we calculated BMI for each subject and scored each of the above psychometric instruments. According to BMI, students were classified as underweight, normal weight, overweight and obese. Statistical analysis was done using SPSS 10.0 software.

**Results:** Mean BMI was  $21.62 \pm 3.7$  (max 35.56, min 15.3). Of the 112 students (43.8% males, 56.3% females), 34.8% were underweight, (underweight girls mounted to 44.4%) 49.1% had BMI within normal range, 12.5% were overweight and 3.6% were obese.

Smokers' mean ( $21.25 \pm 3.29$ ) did not differ significantly ( $p = 0.216$ ) from that of non-smokers. Underweight students' mean score on trait subscale of the STAI ( $52.38 \pm 3.32$ ) was significantly higher ( $p = 0.016$ ) from that of normal weight students. In the same subgroup of patients, a similar trend was noticed also in state anxiety score, yet it did not reach statistical significance. The latter trend in state anxiety score was also observed when comparing underweight with overweight students. ( $p = 0.131$  and  $0.149$ , respectively).

No differences were noted between any of the afore-mentioned subgroups of patients either concerning CES-D score, or Fagerstrom score. ( $p > 0.05$  in all possible comparisons).

**Discussion:** Trait anxiety seems to be significantly higher in underweight adolescents, compared to all other students' subgroups. This being the only exception, anxiety, depression and nicotine dependence does not correlate to 18-years old students' BMI.

### S119

#### **Hospitalizations after suicide attempts on the psychiatric clinic of a general hospital**

C Christodoulou, K Syraki, T Mylonaki, D Sakkas, M Diallina, P Georgila, A Kazantza, C Kalaitzi, P Stathopoulou  
Psychiatric Unit, General Hospital of Athens, Greece

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**Background;** Suicide attempts are the commonest reason for referral for psychiatric evaluation and therefore one of the commonest reasons for admittance to psychiatric clinics through consultation- liaison services. The aim of this study was to assess demographics and psychopathology of patients that attempted suicide and were admitted to the psychiatric clinic of our hospital, as well as the specific features of those suicide attempts.

**Material and Methods:** We retrospectively assessed medical records of patients that were hospitalized between 1989-1999 due to suicide attempts. These data were statistically analyzed and compared to the homologous data of all other patients admitted to our clinic through consultation-liaison psychiatry services during that period.

**Results:** During the aforementioned period, 294 patients were admitted to the psychiatric clinic through consultation - liaison psychiatry services. Of those, 146 (49.6%) were admitted after committing a suicide attempt (56.1% females). Mean age of those patients was  $45.46 \pm 17.38$  years. Patients' that attempted suicide with drug overdose (103) had a mean age of  $48.36 \pm 16.40$  years,

while patients that attempted with other methods (43) had a mean age of  $40.04 \pm 17.20$  years ( $t=2.70$ ,  $p<0.01$ ). Mean hospital stay for all suicide attempters was  $26.57 \pm 20.44$  days, not differing significantly from that of all other patients ( $23.59 \pm 21.68$ ). Mean hospital stay for patients that attempted suicide with drug overdose was  $20.46 \pm 13.51$  days; for those who attempted with other methods it rose to  $38.8 \pm 26.35$  ( $t=4.17$ ,  $p<0.001$ ). The latter was significantly longer than mean hospital stay for other patients (148) admitted through consultation-liaison services ( $23.59 \pm 21.68$ ,  $t=3.35$ ,  $p<0.01$ ).

Commonest others methods, except overdose (43), were jumping (20 patients– 46.5%), followed by ingestion of caustic substances (7 patients– 16.2%).

For 72 attempters, this was their first admission to a psychiatric clinic, while the remaining 74 had been admitted at least once in the past. The respective ratio for other patients admitted through consultation- liaison services was 96:52 ( $\times 2=7.25$ ,  $p<0.01$ ). Attempters were more commonly diagnosed with mood disorders (34.9%). Other common diagnoses, in descending order, were schizophrenic and other psychotic disorders (23.9%) and personality disorders (15%).

**Discussion:** Suicide attempts are the commonest reason for admission to the psychiatric clinic of our hospital through consultation-liaison psychiatry services. Suicide attempters admitted have a significantly higher number of prior psychiatric hospitalizations, compared to other patients admitted through consultation-liaison services. Attempts with other methods than overdose, mount to 33% of all attempts and have a much longer hospital stay. Jumping from heights is the commonest form of them.

## S120

### Voluntary and involuntary admissions on a general hospital psychiatric unit

C Christodoulou, K Syraki, T Mylonaki, A Liossi, K Alexandropoulos  
Psychiatric Unit, General Hospital of Athens, "G. Gennimatas", Greece

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**Background** At emergency psychiatric units the rapid assessment and solution is very important, especially for the cases which exhibit life-threatening behavior or ideation. The decision whether or not to admit a psychiatric patient at risk for involuntary hospitalization is important.

The aim of this study is to compare the clinical differences and similarities as well as the social and demographic characteristics, between the involuntary psychiatric patients and the voluntary group in order to better understand and deal with the clinical and administrative issues involved.

**Material and Methods:** All 40 involuntary psychiatric patients who were admitted to General Hospital of Athens Psychiatric Unit, during a six months period, were compared to another 40 voluntary psychiatric patients, who had been admitted in the same period. The interviews were performed by three of us (C.C., K.S., T.M) and included social, demographic, and psychopathological data, as well as the Crisis Triage Rating Scale (C.T.R.S, Bengelsdorf et al., 1984). This scale permits the assignment of a numerical score from 1 to 5 on each of three dimensions: A) Dangerousness (1=most dangerous to self or others, 5=least), B) Support System (1=poor or absent, 5=excellent), C) Motivation and ability to

cooperate (1=least, 5=most). The score of the scale ranged between 3 (more severe) and 15.

**Results:** There are no differences regarding age and sex or other social and demographic characteristics between the two groups. Also there are no significant differences in respect to the diagnosis, except of affective disorders, where patients with Mania predominate to those with Depression in the involuntary psychiatric patients ( $p<0.001$ ). Less psychiatric patients with involuntary admission were under medication ( $p<0.001$ ). The total mean score in the C.T.R.S. is more severe for involuntary patients' group ( $6.85 \pm 2.23$ ) than the other ( $9.55 \pm 1.50$ ,  $p<0.001$ ). This due to the absence of support system, for the involuntary group ( $2.55 \pm 1.21$  to  $3.74 \pm 1.16$ ,  $p<0.001$ ) and the lack of motivation or inability to cooperate in the same group ( $1.72 \pm 0.93$  to  $2.66 \pm 1.20$ ,  $p<0.001$ ) rather, than to the dangerousness ( $2.57 \pm 1.63$  to  $3.14 \pm 1.56$ ). Sixteen (16) involuntary patients (40%), and 24 voluntary patients (60%) have total score between 8 and 10.

**Discussion:** The main reasons for the admissions on psychiatric department is the absence of support system, the lack of motivation and the inability for cooperation. These two factors determine, in association with the dangerousness, the way of admission (involuntary or voluntary) in a large proportion of patients. It seems that there is a significant overlap between these two ways of admissions. The growth of support systems through either community psychiatry or primary care units of Psychiatric Hospitals or General Hospitals expected to reduce the admissions.

## S121

### Ability of picture naming in chronic schizophrenics

V Folia, R Pita, S Kaprinis, D andylis, G Kaprinis  
3<sup>rd</sup> Department of Psychiatry, School of Medicine, Aristotle University of Thessaloniki & Department of Psychology, Aristotle University of Thessaloniki, Greece

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**Background:** The purpose of this research was the study of the abilities of picture perception and naming in two different groups of schizophrenics, according to their place of living. Subjects: Forty-two chronic schizophrenics participated in this study (21 male, 21 female). Twenty-two of them were living in alternative residences, while the other twenty were institutionalized. The two groups did not differ in the years of schooling and the years of their commitment in institution. Their age ranged between 30 and 81 years and all the patients fulfilled the criteria a) of schizophrenia, according to ICD-10 and b) those of chronicity.

**Material and Methods:** All the patients were evaluated with the Boston Naming Test, with PANSS scale, GAF and Thought, Language and Communication scale (TLC). Possible effects of the positive, negative and general psychopathology symptoms of schizophrenia were investigated, as well as thought and language ability in picture naming. Patients with neuro-degenerative diseases and severe cognitive dysfunction were excluded from the study. None of the patients showed any thought-language disorder according to TLC ( $\leq 7$ ).

**Results:** It was found that a) the two groups differed in the total correct answers they scored for pictures. The group living in alternative housing performed better in the Boston Naming Test; the two groups did not differ in the correct answers with semantic [( $F=1.39$ )=0.471,  $p=n.s$ ] or phonological cues

[( $F=1.39$ )=0.733,  $p=n.s.$ ] b) the negative symptoms' scale correlates positively with the total wrong answers ( $r=0.325$ ,  $p<0.05$ ). The general psychopathology correlates negatively with the total correct answers ( $r=-0.411$ ,  $p<0.05$ ), while it correlates positively with the total wrong answers ( $r=0.424$ ,  $p<0.05$ ) c) TLC thought and language correlate negatively with correct answers ( $r=-0.543$ ,  $p<0.001$ ), ( $r=-0.394$ ,  $p<0.001$ ) and in a positive way with wrong answers ( $r=0.478$ ,  $p<0.001$ ), ( $r=0.363$ ,  $p<0.001$ ).

**Discussion:** The chronic schizophrenics, who live either in alternative residences or in traditional psychiatric hospital, differ in their ability of picture perception and naming, while none of the two groups could benefit from the semantic or phonological cues. Negative and general psychopathology symptoms correlate with quantity and quality of performance.

## S122

### Place of residence-lexical ambiguity: is there any relation between them in schizophrenia?

R Pita, V Folia, D Kandylis, S Kaprinis, G Kaprinis  
3<sup>rd</sup> Department of Psychiatry, School of Medicine, Aristotle University of Thessaloniki & Department of Psychology, Aristotle University of Thessaloniki, Greece

Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S122

**Background:** The purpose of this study was the investigation of the influence of the residential place in the chronic schizophrenics' perception of ambiguous words. Subjects: Thirty-nine chronic schizophrenics participated in the study (20 male, 19 female). The first group, consisting of 21 participants, was living in alternative residences (first group). The other 18 were living in a traditional psychiatric hospital (second group). The two groups did not differ in the years of schooling and the years of their commitment to institution. All the patients fulfilled the criteria of a) schizophrenia, according to ICD-10 and b) those of chronicity. Patients with neurodegenerative diseases and severe cognitive dysfunction were excluded from the study.

**Material and Methods:** The Positive and Negative Syndrome Scale (PANSS) and an ambiguous-words-test were administered. The ambiguous-words-test consisted of a set of incomplete sentences. The subjects were asked to select the meaning of a target word, among three options, in order to form a meaningful sentence. One of the words had the correct meaning according to the contextual information, the second was semantically irrelevant (semantic error), and the third was phonologically similar to the target word (phonological error).

**Results:** According to the analysis it was found that a) the two groups differed in the total correct answers they produced for ambiguous nouns [( $F=1.36$ )=0.022,  $p<0.05$ ], for ambiguous verbs [( $F=1.36$ )=0.021,  $p<0.05$ ] and for ambiguous adjectives [( $F=1.35$ )=0.016,  $p<0.05$ ]. The first group performed better in all the above tasks; there was also statistic significance in the quality of wrong answers. The first group scored fewer semantic [( $F=1.36$ )=0.023,  $p<0.05$ ] and phonological total wrong answers [( $F=0.040$ ),  $p<0.05$ ]. The two groups showed statistical difference in the total semantic wrong answers for adjectives [( $F=1.36$ )=0.023,  $p<0.05$ ] b) The scale of positive syndrome correlated in a positive way with the total score of semantically wrong answers in adjectives ( $r=0.334$ ,  $p<0.05$ ). The negative scale correlated in a negative way with the total correct answers for nouns ( $r=-0.362$ ,  $p<0.05$ ), total correct answers for verbs ( $r=-0.407$ ,  $p<0.05$ ) and total correct answers for words

( $r=-0.441$ ,  $p<0.001$ ). The general psychopathology correlated in a negative way with the total correct answers for verbs, ( $r=-0.327$ ,  $p<0.05$ ) and the total correct answers for words ( $r=-0.400$ ,  $p<0.05$ ), while it correlated positively with the total score of phonologically wrong answers in nouns ( $r=0.441$ ,  $p<0.001$ ).

**Discussion:** The chronic schizophrenics, who reside in alternative residences or in a traditional psychiatric hospital, differ in the way they perceive and elaborate ambiguous words. The place of residence possibly influences the way schizophrenics perform specific verbal tasks. Furthermore, performance in particular tasks, both in the quality and quantity of answers, is correlated with the positive/negative symptoms of schizophrenia.

## S123

### Comparative elements of the quality of life in psychotic vs. neurotic patients

D Kandylis, K Tsigeni, S Kaprinis, S Kleanthous, K Kakoulis, A Ouzouni, G Kaprinis  
3<sup>rd</sup> Department of Psychiatry, School of Medicine, Aristotle University of Thessaloniki, Greece

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**Background:** The investigation of differences in the quality of life among patients with psychotic or neurotic disorders/illnesses.

**Material and Methods:** We investigated two groups of patients (43 psychotics, 45 neurotics). The 39 of them were women and the 27 men. Their mean age was 41.04 years, the mean age at which the disorder/ illness was first manifested 30.28 years and the mean of hospitalizations was 3.26. The above patients were evaluated with the scales WHOQOL and MMSE. The diagnosis of disorders/illnesses was made according to the ICD-10. Patients with a) neurodegenerative diseases, b) severe cognitive dysfunction and c) dependence from alcohol or other prohibited substances, were excluded from the study.

**Results:** According to the analysis it was found that: 1) there is an important difference between the two groups in the second domain (psychological) of WHOQOL scale [ $F(1)=6.299$ ,  $p<0.05$ ], 2) there were no important differences between the two groups for the other three domains of WHOQOL scale 3) there is an important difference between the two groups for the first independent question ( $z=-2.24$ ,  $p<0.05$ ) of the WHOQOL scale, but not for the second.

**Discussion:** The quality of life that results from the psychological state of an individual, as measured by the WHOQOL scale, differs between neurotic and psychotic patients. The patient's subjective evaluation of his/her quality of life also differs in the same groups.

## S124

### Quality of life of schizophrenics who live in alternative residences in relation to their symptoms and illness type

D Kandylis, TH Mavridis, S Kaprinis, T Konsta, A Iacovedes  
3<sup>rd</sup> Department of Psychiatry, School of Medicine, Aristotle University of Thessaloniki, Greece

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**Background:** The purpose of this research was the study of the influences of the symptoms' (positive/negative) and illness's type (type I,II) in the quality of life of chronic schizophrenics who live in alternative residences, in the frame of the developing system of psychiatric care in Greece.

**Material and Methods:** 50 patients (30 male, 20 female) who live in alternative residences (24 in group homes, 14 in board and care houses and 12 in supervised apartments) were examined. Their age ranged from 29 to 80 years and all the patients fulfilled the criteria a) of schizophrenia, according to ICD-10 and b) of chronicity. The patients were evaluated with the following scales: Satisfaction with Life Domains Scale (SLDS), PANSS and MMSE. Possible effects of positive, negative and general psychopathology symptoms were investigated, as well as possible effects of the illness's type in the satisfaction they get from their everyday life. Patients with neurodegenerative diseases and severe cognitive dysfunction were excluded from the study.

**Results** According to the statistic analysis it was found that the patients' satisfaction from everyday life: a) correlates in a negative way with the positive syndrome ( $r=-0.315$ ,  $p<0.05$ ) and the general psychopathology of PANSS scale ( $r=-0.373$ ,  $p<0.01$ ), while it does not correlate with the scale of negative syndrome, the compound scale and the total scale of PANSS does not correlate with the illness's type.

**Discussion:** The satisfaction which chronic schizophrenics, who live in alternative residences, derive from their everyday life, in the frame of the developing system of psychiatric care in Greece, is correlated and influenced by the positive symptoms of the illness and those of general psychopathology, while it is not influenced by the type of their illness.

## S125

### Perceived satisfaction from everyday life among chronic schizophrenics: influences of demographic and clinical factors

D Kandyliis, S Kaprinis, V Folia, K Aspradakis, A Iacovedes  
3<sup>rd</sup> Department of Psychiatry, School of Medicine, Aristotle University of Thessaloniki, Greece

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**Background:** The purpose of this research was the study of possible influences and correlations of the satisfaction in everyday life among chronic schizophrenics, who are being supported from the present system of community psychiatry of Greece, due to some particular demographic and clinical factors.

**Material and Methods:** 102 patients (56 men, 46 women) aged 27–70 years old, who live in alternative residences (50 people) or with their family (52 people) and fulfilled the criteria a) of schizophrenia according to ICD-10 and b) of chronicity, were examined. The average time of their education was 8.99 years. The patients were evaluated with the following scales: Satisfaction with Life Domains Scale (SLDS), GAF and MMSE. Patients with neurodegenerative diseases and severe cognitive dysfunction, as well as alcohol and substance abusers were excluded from the study.

**Results:** According to the analysis of the data it was found that the patients' satisfaction from everyday life: a) correlates negatively with GAF scale (Pearson's  $r=-0.394$  and  $p<0.01$ ), and with the existence of a physical disability (Spearman's  $\rho=-0.234$  and  $p<0.05$ ), b) does not correlate with age, sex and years of education, c) shows no statistical difference in the perceived satisfaction from patients' everyday life between those who reside in their houses and those who stay in transitional hostels and in supervised apartments, d) there is a difference in the perceived satisfaction from everyday life where their entanglement or not with community services is concerned [ $t(100)=2.28$ ,  $p<0.05$ ], e) there is a difference [ $t(67)=3.04$ ,  $p<0.01$ ] between the patients who have a stable occupation and those who do not.

**Discussion:** The satisfaction which chronic schizophrenics who live in alternatives, residences derive from their everyday life, in the frame of a developing system of community psychiatry in Greece, is correlated and influenced from certain demographic and clinical factors (functioning, physical disability), while it is not influenced from others (age, sex, years of education). The chronic schizophrenics who reside in transitional hostels and in supervised apartments can obtain the same satisfaction from their everyday life as those who reside in their houses. The patients who have a stable occupation report a better satisfaction from their everyday life than those who do not.

## S126

### Perceived satisfaction from everyday life: are there any predictors in chronic schizophrenics?

S Kaprinis, A Alexiadou, V Folia, TH Lioura, D Kandyliis  
3<sup>rd</sup> Department of Psychiatry, School of Medicine, Aristotle University of Thessaloniki, Greece

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**Background:** The purpose of this research was the study of possible factors that predict the perceived satisfaction from everyday life in chronic schizophrenics.

**Material and Methods:** One hundred-two patients (56 men and 46 women), aged 27–70 years, who fulfilled the criteria a) of schizophrenia according to ICD-10 and b) those of chronicity, were examined. The mean age of their education was 88.9 years. The patients were evaluated with the following scales: Satisfaction with Life Domain scale (SLDS), PANSS, GAF, BPRS and MMSE. Patients with neuro-degenerative diseases and severe cognitive dysfunction, as well as alcohol and substance abusers were excluded from the study.

**Results:** According to the analysis it was found that a) there is a negative correlation between the perceived satisfaction from everyday life with the positive syndrome scale, the general psychopathology, the total score of PANSS, as well as the score in BPRS scale. Furthermore, the perceived satisfaction of everyday life correlates negatively with i) certain demographic factors ii) the entanglement with community services and iii) the existence of a protected job or occupation. b) It was also found that the perceived satisfaction of everyday life correlates positively with the patient's functioning c) Linear Regression Analysis showed that predictors of perceived satisfaction from everyday life in chronic schizophrenics are the positive syndrome of PANSS scale ( $r=0.375$ ,  $B=-0.618$ ,  $Beta=-0.295$ ) and the existence or not of a job/occupation ( $r=0.440$ ,  $B=-3.478$ ,  $Beta=-2.44$ ).

**Discussion:** Although a lot of factors correlate with and influence the perceived satisfaction from everyday life in chronic schizophrenics, the best predictors for their quality of life are the existence of a positive syndrome and a protected job/occupation.

## S127

### Ability of picture naming in chronic schizophrenics

V Folia, R Pita, S Kaprinis, D andyilis, G Kaprinis  
3<sup>rd</sup> Department of Psychiatry, School of Medicine, Aristotle University of Thessaloniki & Department of Psychology, Aristotle University of Thessaloniki, Greece

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**Background:** The purpose of this research was the study of the abilities of picture perception and naming in two different groups

of schizophrenics, according to their place of living. Subjects: Forty-two chronic schizophrenics participated in this study (21 male, 21 female). Twenty-two of them were living in alternative residences, while the other twenty were institutionalized. The two groups did not differ in the years of schooling and the years of their commitment in institution. Their age ranged between 30 and 81 years and all the patients fulfilled the criteria a) of schizophrenia, according to ICD-10 and b) those of chronicity.

**Material and Methods:** All the patients were evaluated with the Boston Naming Test, with PANSS scale, GAF and Thought, Language and Communication scale (TLC). Possible effects of the positive, negative and general psychopathology symptoms of schizophrenia were investigated, as well as thought and language ability in picture naming. Patients with neuro-degenerative diseases and severe cognitive dysfunction were excluded from the study. None of the patients showed any thought-language disorder according to TLC ( $\leq 7$ ).

**Results:** It was found that a) the two groups differed in the total correct answers they scored for pictures. The group living in alternative housing performed better in the Boston Naming Test; the two groups did not differ in the correct answers with semantic [(F=1.39)=0.471, p=n.s] or phonological cues [(F=1.39)=0.733, p=n.s] b) the negative symptoms' scale correlates positively with the total wrong answers ( $r=0.325$ ,  $p<0.05$ ). The general psychopathology correlates negatively with the total correct answers ( $r=-0.411$ ,  $p<0.05$ ), while it correlates positively with the total wrong answers ( $r=0.424$ ,  $p<0.05$ ) c) TLC thought and language correlate negatively with correct answers ( $r=-0.543$ ,  $p<0.001$ ), ( $r=-0.394$ ,  $p<0.001$ ) and in a positive way with wrong answers ( $r=0.478$ ,  $p<0.001$ ), ( $r=0.363$ ,  $p<0.001$ ).

**Discussion:** The chronic schizophrenics, who live either in alternative residences or in traditional psychiatric hospital, differ in their ability of picture perception and naming, while none of the two groups could benefit from the semantic or phonological cues. Negative and general psychopathology symptoms correlate with quantity and quality of performance.

## S128

### Impact of cognitive dysfunction and symptoms on social outcome of outpatients with schizophrenia

V Bozikas<sup>1</sup>, M Kosmidis<sup>1,2</sup>, A Kafantari<sup>1</sup>, K Gamvrula<sup>1</sup>, E Vasiliadou<sup>2</sup>, P Petrikis<sup>2</sup>, A Karavatos<sup>1</sup>

<sup>1</sup>1<sup>st</sup> Department of Psychiatry, Aristotle University of Thessaloniki, Greece; <sup>2</sup>Department of Psychology, Aristotle University of Thessaloniki, Greece

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**Background:** Poor social and occupational functioning is a defining feature of schizophrenia present even from the first-episode of the illness. The purpose of the current study was to investigate the relationship of cognitive dysfunction and symptoms with quality of life in a group of Greek outpatients with schizophrenia.

**Material and Methods:** Participants were 40 outpatients with schizophrenia (DSM-IV): 25 men and 15 women, all receiving antipsychotic medication at the time of the study. Their mean age was 36.3 years (SD=9.6), their mean level of education was 10.9 years (SD=3.3) and their mean duration of illness was 11.0 years (SD=8.2). Social adjustment was assessed with the Greek version of Quality of Life Scale (QLS; interpersonal relations, instrumental role functioning, intrapsychic foundation, and common objects and activities subscales). Symptoms of

schizophrenia were measured with the Greek version of the Positive and Negative Syndrome Scale (PANNS; positive, negative, and general psychopathology subscales), and extrapyramidal symptoms with the Extrapyramidal Symptom Rating Scale (ESRS; subjective complains, parkinsonism, dystonia, and tardive dyskinesia). Finally, a battery of neuropsychological tests was administered in order to assess the following cognitive domains: executive functions-abstractation, executive functions-inhibition, executive functions-fluency, verbal memory, visual memory, working memory, attention, visuospatial ability, and psychomotor speed/visual scanning.

**Results:** Scores on the interpersonal relations subscale were significantly (at  $p<0.01$ ) related with negative symptoms [ $r(40)=0.66$ ], parkinsonism [ $r(40)=-0.47$ ], and executive functions-fluency [ $r(35)=0.60$ ]. The relationship of scores on the instrumental role functioning subscale with other measures did not meet our conservative criterion of significance. Performance on the intrapsychic foundation subscale was significantly correlated with negative symptoms [ $r(40)=-0.61$ ], and executive functions-fluency [ $r(35)=0.51$ ]. Finally, scores on the common objects and activities subscale were significantly related with negative symptoms [ $r(40)=-0.60$ ], parkinsonism [ $r(40)=-0.57$ ], executive functions-fluency [ $r(35)=0.48$ ], visual memory [ $r(38)=0.47$ ], and psychomotor speed/visual scanning [ $r(38)=0.47$ ].

**Discussion:** Our findings suggest that severity of negative symptoms, parkinsonism, and cognitive dysfunction, especially performance on measures of executive functions, are important determinants of functional outcome in schizophrenia.

## S129

### Affect perception in everyday scenarios in schizophrenia: impairment in negative valence

M Kosmidis<sup>1,2</sup>, V Bozikas<sup>2</sup>, M Giannakou<sup>1</sup>, D Anezoulaki<sup>1</sup>, P Petrikis<sup>2</sup>, B Fantie<sup>3</sup>, A Karavatos<sup>2</sup>

<sup>1</sup>Department of Psychology, Aristotle University of Thessaloniki, Greece; <sup>2</sup>1<sup>st</sup> Department of Psychiatry, Aristotle University of Thessaloniki, Greece; <sup>3</sup>Department of Psychology, American University, Washington DC, USA

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**Background:** Studies of schizophrenia, in parallel to the converging evidence for cognitive impairments, have also suggested that patients may have difficulties in perceiving others' emotions, which may contribute to poor social functioning. The purpose of this study was to investigate whether a group of patients with schizophrenia presented impairment in affect recognition within social context. Furthermore, we wanted to explore whether the schizophrenic patients deficits in emotion perception depends on the valence of the emotion – positive or negative – that needs to be recognized.

**Material and Methods:** Participants were 35 patients with schizophrenia (DSM-IV): 21 men and 14 women and 32 healthy controls: 23 men and 9 women. The two groups were matched on age, education, and gender. All patients were receiving antipsychotic drugs at the time of the testing. We administered Fantie's Cartoon Test (FCT), which is a computerized test that comprises 57 drawings; each one depicts an everyday scenario with one or more people, and in each item the face of one person is missing. On each item, there is a series of seven photographs depicting the basic emotions (happiness, sadness, surprise, fear, anger, disgust, as well as neutral) expression. The participants were

asked to indicate the photograph depicting the emotional expression which best fit the missing face.

**Results:** Patients with schizophrenia had significantly lower scores on the FCT than healthy controls [ $F(1.65)=5.81, p=0.019$ ]. Patients performed worse in sadness [ $F(1.65)=5.66, p=0.02$ ] and anger [ $F(1.65)=7.16, p=0.009$ ] but they were equally accurate with the controls in surprise [ $F(1.65)=1.064, p=0.306$ ], happiness [ $F(1.65)=0.455, p=0.502$ ], fear [ $F(1.65)=2.50, p=0.119$ ] and disgust [ $F(1.65)=2.41, p=0.125$ ]. The rank order of the six emotions from highest to lowest mean scores was for the healthy participants: happiness, anger, disgust, fear, sadness and surprise, and for the patients: happiness, disgust, fear, anger, sadness and surprise.

**Discussion:** Patients with schizophrenia presented deficits in emotion perception in the presence of static everyday cues, which were attributable to impairment in recognition of anger and sadness. These results are in agreement with the negative valence hypotheses in schizophrenia.

### S130

#### Self-monitoring in schizophrenia

K Roikou<sup>1</sup>, V Bozikas<sup>2</sup>, M Kosmidis<sup>1</sup>, C Andreou<sup>2</sup>, A Piachas<sup>2</sup>, A Giazkoulidou<sup>1</sup>, A Karavatos<sup>2</sup>

<sup>1</sup>Department of Psychology, Aristotle University of Thessaloniki, Greece; <sup>2</sup>1<sup>st</sup> Department of Psychiatry, Aristotle University of Thessaloniki, Greece

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**Background:** Our purpose in undertaking the current study was to investigate self-monitoring, that is, the ability to monitor effectively their own willed actions, in patients with schizophrenia.

**Material and Methods:** We compared the performance of a group of 35 patients (25 men and 10 women) with schizophrenia (DSM-IV), all receiving antipsychotic medication at the time of the study, with that of 34 age- and education-matched normal controls (14 men and 20 women) on a self-monitoring task. This task consisted of three conditions. In the 1<sup>st</sup> condition, participants had to generate simple abstract drawings without being able to see what they drew. Immediately after each trial, four copies of the same drawing were presented to the participant (each rotated 0°, 90°, 180° or 270°), who was asked to select the correct orientation in which the drawing had originally been made. The 2<sup>nd</sup> condition employed an identical procedure to the 1<sup>st</sup>, but the participant was told what to draw. The 3<sup>rd</sup> condition also employed the same procedure as the 2<sup>nd</sup>, but the participant was now able to watch him/herself draw each object. Symptoms of schizophrenia were measured with the Greek version of the Positive and Negative Syndrome Scale (PANSS). Also, a battery of neuropsychological tests was administered to assess the following cognitive domains: executive functions, visuospatial perception, memory (verbal and visual), attention, and verbal skills.

**Results:** Patients with schizophrenia performed significantly worse than normal controls for each of the three conditions of the self-monitoring task. Scores in the 1<sup>st</sup> condition correlated significantly with memory [ $r(35)=0.513$ ] and visuospatial perception [ $r(35)=0.467$ ]. Scores in the 2<sup>nd</sup> condition were significantly correlated with the negative [ $r(35)=-0.438$ ] and cognitive component of the PANSS [ $r(35)=-0.357$ ]. Furthermore, performance on the 2<sup>nd</sup> condition correlated significantly with executive functions [ $r(35)=0.589$ ], memory [ $r(35)=0.661$ ], attention [ $r(35)=0.543$ ], visuospatial perception [ $r(35)=0.444$ ], and verbal skills [ $r(35)=0.439$ ]. Finally, there was a significant

correlation between performance on the 3<sup>rd</sup> condition and executive functions [ $r(35)=0.488$ ], memory [ $r(35)=0.488$ ], attention [ $r(35)=0.463$ ], and visuospatial perception [ $r(35)=0.342$ ]. After controlling for the cognitive domains that were found to be associated with the three self-monitoring conditions, differences between the two groups in all the self-monitoring conditions were no longer significant.

**Discussion:** Our findings suggest that patients with schizophrenia are impaired in self-monitoring, but this impairment appears to reflect more basic neuropsychological deficits.

### S131

#### Molecular genetics of neurodevelopment and treatment response in psychosis

JL Kennedy, T Klempan, D Mueller, A Wong, J Volavka, P Czobor, J Lieberman

Neurogenetics Section, Centre for Addiction and Mental Health, R-31, 250 College St., Toronto, ON M5T1R8, Canada

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**Background:** There is evidence for neurodevelopmental aberrations in both schizophrenia and bipolar disorder. We have studied the genes for synaptosomal associated protein of 25 kilodaltons (SNAP-25) and the brain derived neurotrophic factor (BDNF), that are known to be involved in normal brain development. SNAP-25 expression is associated with regions of high synaptic plasticity and is required for axonal elongation. A strain of mouse designated coloboma possessing a 2cM deletion encompassing the Snap-25 gene exhibits hyperactivity, delayed development, and abnormalities in dopaminergic, serotonergic, and glutamatergic transmission. Additionally, several studies have suggested a direct involvement of SNAP-25 in schizophrenia etiology based upon altered levels of brain and CSF expression. Furthermore, our group (Wong et al., 2003) have observed SNAP-25 expression to be significantly altered in rats treated with the antipsychotic medication haloperidol, versus controls. We examined transmission of alleles at three single nucleotide polymorphisms in the SNAP-25 gene in more than 100 schizophrenia triad families and found evidence of a haplotype related to the disease (Klempan et al., 2002).

**Material and Methods:** We then went further to examine SNAP-25 in antipsychotic drug response, investigating a sample of 61 schizophrenia patients who had undergone an antipsychotic drug clinical trial.

**Results:** ANOVA-based analysis of SNAP-25 genotypes against mean change in the PANSS scores (14 week) for this sample is significant for two of the three genetic variants (Ddel: \* $F=0.147, p=0.703$ ; MnlI: \* $F=5.586, p=0.008$ ; Tail: \* $F=5.525, p=0.008$ ).

**Discussion:** It may be that SNAP-25 gene variation alters the course of neurodevelopment in individuals who go on to have schizophrenia, or it may influence the synaptogenic role that SNAP-25 plays in adult humans. Another gene of neurodevelopmental interest is the BDNF. We have shown that BDNF plays an important role in risk for bipolar mood disorder (Neves-Pereira et al., 2002), child onset depression (Strauss et al., 2002) and possibly in schizophrenia (Muglia et al., 2003). We are currently dissecting the phenotype in these disorders to test whether BDNF is involved more specifically in mood, psychotic symptoms, early onset, cognition, or drug response. Overall, the genetic prediction of these major psychiatric disorders is moving closer to clinical application.

**S132****Relationship between individual differences in information processing speed and neuropsychological profile in preschool children.**

S Kiselev, E Skacunova

Urals State University, Yekaterinburg, Russia

*Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S132*

**Background:** The aim of this study was to examine a possible relation between the speed of information processing and individual differences in neuropsychological profile in preschool children.

**Material and Methods:** The speed of information processing was measured in 34 children at 6–7 years with the computerized technique, developed by the authors. The individual differences in neuropsychological profile were investigated with the child neuropsychological technique, developed in Moscow State University. This technique allows to establish the preferred development of left or right-hemisphere function in children.

**Results:** Children with the preferred development of right-hemisphere and left-hemisphere function had the differences in level of performance of some sensorimotor reactions. In particularly the “right-hemisphere” children were more successful in performance of the differential reactions on stimulus, which differed only on orientation. At the same time the “left-hemisphere” children were more successful in performance of the differential reactions on stimulus, which differed only on color.

**Discussion:** We have not found out the distinctions between these groups concerning of simple reaction.

**S133****Parkinson-Plus syndromes: cortico-basal ganglionic degeneration (CBGD)**

D Kopanakis, A Rossidou, E Soubasi, A Kiamili, D Pappas, E Tzamourani

Neurology Department of General Hospital of Elefsina “Thriassion” Athens Greece

*Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S133*

**Background:** The current paper is a case report

**Material and Methods:** The patient is a 58 years-old man with a history of onset of gait disorder and psychotic symptomatology (depression, mania, anxiety, hyposexuality) 8 years ago, at the age of 50. His medical history was registered and reported here.

**Results:** The patient was treated with antipsychotic drugs without any improvement. After a year, psychotic symptoms improved including agoraphobia and panic attacks. 2 years later he stopped antipsychotic therapy on his own. In the same time he presented motor symptoms including tremor of the right hand; levodopa/carbidopa therapy was initiated upon diagnosis of Parkinson’s disease. He did well for 1 year, when he began having problems with complex involuntary movements in which the right hand was rising towards the head and he was repeatedly taking his glasses on and off. At the same time he presented visual hallucinations, sleep disturbance, fear of being poisoned and signs of cognitive impairment, which progressed to actual dementia state. M.R.I.: Small size cerebral infarcts (basal ganglia) E.E.G.: Slow rhythm without paroxysmal abnormalities. The patient was treated with Levodopa/Carbidopa, dopamine agonist and Galantamine. Over the next 4 months he was free of psychosis and presented a great improvement on mental status.

**Discussion:** The initial psychotic symptomatology with mild parkinsonian signs, based on previous behavioral abnormalities of the patient’s personality, led to a conventional antipsychotic treatment, in combination with Levodopa/Carbidopa; 2 years later, psychotic symptoms got worse and he presented specific involuntary movements (Alien Hand Sign) and severe behavioral and cognitive changes. The clinical features including motor disturbance, Alien Hand Sign, cognitive disturbances and dementia led us to the diagnosis of Corticobasal Ganglionic Degeneration.

**S134****Alcoholism and depression**S Bakouras, E Bakola, A Bakoura, E Kotrotsiou, A Skyllakos  
TEI- Larissa, Psychiatric Clinic “Ippokratēio”, Larissa, Greece*Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S134*

**Background:** The aim of the present study is to investigate the comorbidity between alcoholism and depression. Alcoholism and depression are examined as separate co-existent disorders.

**Material and Methods:** The total sample consists of 70 subjects (35 for the experimental group, that is people with alcohol dependence and 35 for the control group, that is people without alcohol dependence) aged 24–63 with an average of 46 years for the experimental group and 47 for the control group. The subjects of the experimental group (30 men and 5 women) were hospitalised patients and outpatients. Consideration was taken for the equation of the two groups of the sample regarding age, sex, educational level and marital status. An improvised questionnaire of personal elements was used for the data collection. The diagnosis of alcohol dependence was done with the criteria of DSM-IV. The questionnaire of calculation and estimation of depression QD2 by P. Pichot was used for the diagnosis of depression. The  $\chi^2$ -test was applied for the statistical data analysis

**Results:** 1) statistically significant correlation between depression and alcohol dependence, 2) statistically significant difference concerning the existence of depression between the two groups.

**Discussion:** The comorbidity between alcohol dependence and depression is proved. Finally, it is worth mentioning that the educational level and the marital status of the people in the experimental group seem to be related with high levels of depression.

**S135****Correlations between serum lipids levels and ABCA1 gene in Alzheimer’s disease**M Tsolaki, K Petsanis, A Gkouliova, A Toulou, D Molyva, A Papassotiropoulos, A Kazis  
3<sup>rd</sup> Department of Neurology, Aristotle University of Thessaloniki, G.H. “G. Papanikolaou”, Greece*Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S135*

**Background:** Several studies suggest that ABCA1 gene encoding ATP-binding cassette transporters is a key regulator of cellular HDL metabolism and macrophage differentiation. These transporters are responsible of translocation processes of lipophilic compounds across biologic membranes. They act as major regulators of HDL metabolism and as a secretory regulators of cholesterol and phospholipid containing vesicles. A well-established risk factor for the development of Alzheimer’s Disease (AD) is the e4 allele of the gene encoding Apo E which is central in the maintenance of brain cholesterol homeostasis.

Because depletion of brain cholesterol levels reduces the generation of  $\beta$ -amyloid peptides (A $\beta$ ) and because cholesterol lowering drugs may reduce the risk of AD we hypothesised that the cholesterol related gene ABCA1 may contribute to the genetic risk of AD.

**Material and Methods:** In our study we have examined a sample of 49 unselected Alzheimer's Disease patients who visited for the first time our outpatient memory clinic.

**Results:** We found no correlation between serum cholesterol levels and ABCA1 gene in our Greek sample ( $p > 0.05$ ).

**Discussion:** Our conclusion is that there is need to be done further investigation into the mechanisms by which serum lipids are correlated with the pathogenesis of Alzheimer's Disease.

### S136

#### Pupillometry in myasthenia gravis

D Fotiou<sup>1</sup>, I Tsipsis<sup>1</sup>, G Rizos<sup>1</sup>, G Karatasos<sup>1</sup>, A Goulas<sup>2</sup>, F Fotiou<sup>1</sup>

<sup>1</sup>Laboratory of Clinical Neurophysiology, General Hospital AHEPA, Aristotle University of Thessaloniki, Greece; <sup>2</sup>Lab of Fluid Mechanics, Aristotle University of Thessaloniki, Greece

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**Background:** Impaired eye movements and other disorders of the visual system, such as diplopia and ptosis of the eyelid are among the most common clinical manifestations of myasthenia gravis (MG), while the disorders of pupil size and papillary dysfunction are less well-known and has never been fully resolved. Glaser (1981) and David A. (2002) categorically stated that the pupils are unaffected whereas Wilson (1940) and Walton (1977) indicate that the pupils may be sluggish or exhibit fatigability. One of the most interesting features of the eye is the pupil's reaction to light. The pupil serves as a gain-control device for the visual system. It responds to luminance changes in the environment, and this response is largely governed by a well-characterized subcortical projection through the pretectum to the accessory oculomotor nucleus (Lowenfeld 1993). The purpose of this study was to measure the pupil reaction to light by using a new technologically infrared video pupillometer in subjects with a newly diagnosed myasthenia gravis.

**Material and Methods:** Twenty eight patients and twenty controls were studied. All patients (18 females and 10 males) with a ranging between 22 and 65 years were free of any other neurological or ophthalmological disease. In order to study the pupil reaction to light (velocity, acceleration and other parameters), a new system was developed in the clinical neurophysiology laboratory in collaboration with the fluid mechanics section of the Aristotle University of Thessaloniki. This system of pupillometry consists of: 1) an infrared camera of 260 frames per second 2) an SLE lamp 3) an infrared spot light 4) a head mounting device.

With central control from a P/C and fully automatized the system consists of a digital camera with recording ability of 260 frames per second (a simple non – digital camera gets 25 frames per second). This high recording ability allows precise calculations of this minute velocity, acceleration and other parameters while simultaneously a fully statistical analysis is being processed by using the summing average of all the recordings.

**Results:** Statistically important differences were observed between two groups in relation to the maximum velocity and maximum acceleration to miosis, while the pupil reaction time for

miosis was clearly delayed in the group of the myasthenic patients. Statistically important differences were observed and after the treatment with pyridostigmine.

**Discussion** The results of this study suggest that patients with myasthenia gravis demonstrated diminished amplitude, velocity, acceleration and other parameters. The strict selection criteria of newly diagnosed MG patients free of any neurological or ophthalmological disease, with best corrected visual acuity of 20/20, and showing a good response to pyridostigmine treatment, excludes the possibility that other factors could have produced the differences in pupil reaction to light between patients and normal subjects. In conclusion, from the above results it seems that pupillometry is an easy to use non invasive method that contributes to the early diagnosis of myasthenia gravis while it can give us information for the therapeutic outcome.

### S137

#### Pupillometry in Parkinson disease, correlation with Dat Scan findings

D Fotiou<sup>1</sup>, CH Tsalamas<sup>1</sup>, G Gerasimou<sup>1</sup>, I Tsipsis<sup>1</sup>, G Mentenopoulos<sup>1</sup>, A Goulas<sup>2</sup>, F Fotiou<sup>1</sup>

<sup>1</sup>Laboratory of Clinical Neurophysiology, General Hospital AHEPA, Aristotle University of Thessaloniki, Greece; <sup>2</sup>Lab of Fluid Mechanics, Aristotle University of Thessaloniki, Greece

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**Background:** The diagnosis of Parkinson Disease (PD) has been based on clinical criteria when approximately 70–80% of the nigrostriatal neurons of the substantia nigra (SN) are degenerated. Early diagnosis can be essential for an effective treatment. Latest developments, like PET with 18F-L-DOPA or SPECT with (123)I, try to identify PD in an earlier state by measure the degeneration of dopamine nerve cells. Pupillometry, detects pupil reaction to light which is subserved by subcortical projections, can be combined with this techniques to provide useful data for diagnosis and progression of PD.

**Material and Methods:** To detect correlations of neurochemical brain imaging studies with pupillometry in patients with hemi- Parkinson disease, an early phase of this disease. We study 9 untreated patients (7 males and 2 females, 50–74 years of age) who developed symptoms only on one side. The function of basal ganglia evaluated using (123)I Dat SCAN and pupil reaction to light with a new system developed in our laboratory in collaboration with the Fluid Mechanics Dept of the Aristotle University of Thessaloniki, consists of an infra-red video camera, an SLE lamp and an infrared spot light, which has the capacity to record and calculate precisely diameter, acceleration, velocity and other parameters. As a control group we use 10 healthy volunteers statistical similar, studied with pupillometry.

**Results:** Pupillometry reveal statistically significant reduction in maximum velocity and maximum acceleration in patients who was positive for hemi-parkinsonism using imaging studies, in comparison with control group.

**Discussion:** The use of SPECT in early diagnosis of PD has been recently reported. Despite the number of patients in our study, we suggest that pupillometry can give us more information about the dopamine system even better when is combined with other imaging techniques, and it can be a valuable tool in the study of early phase of Parkinson Disease. Future studies will provide more data about the possibility of using Pupillometry as a screening test to identify preclinical Parkinson disease.

**S138****Calcium-blood levels abnormalities and neurological and psychiatric manifestations: two characteristic cases in Florina, Greece**

P Raptis<sup>1</sup>, T Savidis<sup>1</sup>, N Liakopoulos<sup>2</sup>, K Hatzikonstantinou<sup>2</sup>  
<sup>1</sup>Department of Neurology, Florina Greece; <sup>2</sup>Department of Internal Medicine, Florina Greece

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**Background:** To present the direct relationship of calcium blood levels abnormalities with neurological and psychiatric disorders.

**Material and Methods:** Two cases are discussed, one with hypercalcemia and one with hypocalcemia and their mental state was studied.

**Results:** In first case, a 73-years old woman presented to us with fatigue and progressive neurological manifestation being developed within 24 hours was studied. Laboratory studies revealed hypercalcemia. In the second case a 40-years old woman, presented with a major epileptic crisis was studied. Laboratory studies revealed hypocalcemia.

**Discussion:** In conclusion, during the differential diagnosis of any kind of mental disorders, metabolic abnormalities, especially of calcium blood levels must be included.

**S139****Assessment of the cognitive profile of patients with alcohol related cognitive disorders with memory complaints**

I Theotoka<sup>1</sup>, I Liappas<sup>1</sup>, E Kapaki<sup>2</sup>, I Ilias<sup>3</sup>, G Paraskevas<sup>2</sup>, A Rabavilas<sup>1</sup>

<sup>1</sup>Department of Psychiatry, Athens University, Medical School "Eginition" Hospital, Athens, Greece; <sup>2</sup>Department of Neurology, Athens University, Medical School "Eginition" Hospital, Athens, Greece; <sup>3</sup>"Klimax" Support Foundation, Athens, Greece

Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S139

**Background:** Abuse and dependence on alcohol can lead to the deterioration of cognitive function ranging from amnesic disorder to mild cognitive impairment even dementia. The aim of the present study was to evaluate the neuropsychological characteristics of alcoholic patients that report memory disturbances.

**Material and Methods:** Population and method: We studied 77 chronic alcoholic patients aged: 23–83 years, mean duration of alcohol abuse: 16.4 years, from the "Athena" program of the Psychiatric Clinic at "Eginition" Hospital and who complained in the clinical interview of disturbances in memory. 50 healthy volunteers were studied as well. Both groups completed a battery of neuropsychological tools: MMSE, SKT, Verbal Fluency Test (Category & Letter), Clock Test, Digit Span-Forward and Backward.

**Results:** Alcoholics had statistically significant lower scores on: MMSE, Verbal Fluency Test-Category-Letter, Digit Span-Forward and Backward ( $p < 0.005$ , t-test) and higher scores on SKT<sub>2</sub> (immediate recall), SKT<sub>4</sub> (numbers arrangement), SKT<sub>6</sub>, SKT<sub>9</sub> (recognition memory) ( $p < 0.005$ , Kruskal-Wallis test). In alcoholic subjects correlations  $R$  were found between MMSE, SKT, SKT<sub>6</sub>, SKT<sub>7</sub>, Verbal Fluency Test-Category-Letter, Clock Test, Digit Span-Forward and Backward and age and MMSE, Clock Test, Digit Span-Backward and years of alcohol abuse (Table I).

**Discussion:** Alcoholic patients presented mild disturbances in immediate memory, recognition memory, attention, verbal fluency, working memory. With regard to the effect of age in alcoholic

**Table I Alcoholics vs Controls in Neuropsychological Tests**

Tests	Alcoholics	Controls
MMSE	27.49 ± 3.70	28.98 ± 0.82*
SKT	6.84 ± 5.88*	2.00 ± 1.43
SKT2	1**	0
SKT4	1**	0
SKT6	1**	0
SKT8	1	1
SKT9	1**	0
VFT-Category	13.29 ± 5.00	21.38 ± 2.35*
VFT-Letter	8.23 ± 3.58	21.62 ± 2.35*
DS-Forward	6.31 ± 1.14	6.98 ± 0.82*
DS-Backward	3.90 ± 1.11	5.22 ± 0.62*

\* $p < 0.005$ , t-test, \*\* $p < 0.005$  Kruskal-Wallis

**Correlation between Age and Duration of Abuse vs. Neuropsychological Tests**

	MMSE	SKT	SKT6	SKT7
Age (years)	-0.449 $p = 0.000$	0.252 $p = 0.027$	0.267 $p = 0.019$	0.271 $p = 0.018$
Duration of abuse (years)	-0.274 $p = 0.016$	0.116 $p = 0.312$	0.0244 $p = 0.836$	0.007 $p = 0.537$

	VTF-Category	VTF-Letter	Clock Test
Age (years)	-0.39 $p = 0.000$	-0.379 $p = 0.001$	-0.368 $p = 0.001$
Duration of abuse (years)	-0.138 $p = 0.230$	-0.119 $p = 0.303$	-0.267 $p = 0.019$

	Digit Span Forward	Span Backward
Age (years)	-0.29 $p = 0.010$	-0.475 $p = 0.000$
Duration of abuse (years)	-0.113 $p = 0.326$	-0.223 $p = 0.051$

patients, we observed that all the cognitive functions presented deficiencies. These deficits may be accentuated by age, but we cannot assume persistent cognitive impairment in alcoholic patients. On the other hand, years of abuse limit the wide spectrum of cognitive disorders to visuospatial and working memories disabilities, which reflect frontal lobe dysfunction.

**S140****The influence of migration on the development of psychiatric disorders among first and second generation Greek migrants in Belgium**

A Drossos<sup>1</sup>, B Mortreux<sup>2</sup>, I Nimatoudis<sup>2</sup>, A Karavatos<sup>1</sup>, JP Roussaux<sup>2</sup>

<sup>1</sup>Department of Psychiatry, Aristotle University of Thessaloniki, Thessaloniki, Greece; <sup>2</sup>Service de Psychopathologie, Cliniques Universitaires Saint-Luc, Université Catholique de Louvain, Bruxelles, Belgium

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**Background:** It is well established that migration represent a risk factor for developing psychopathological problems among the first generation migrants. The scope of the study was to

investigate the possibility that migration also play a significant role in the appearance of psychiatric disorders in second generation immigrants.

**Material and Method:** We conducted a cross-sectional survey involving fifty young second-generation Greek migrant and fifty young Belgian patients matched for the variables of age and gender. The patients were selected from the emergency department of the hospital Saint-Luc, Université Catholique de Louvain located in Brussels, Belgium. We compared the previous psychiatric history of the patients, the present clinical state, the family psychiatric history and social & demographic factors between the two groups.

**Results:** Multivariate analyses showed that the group of the young Greek migrants (GP) presented a statistically significant higher rate of previous family psychiatric history than the Belgian patients (BP). The psychopathology of their parents was developed during the immigration, mainly a few years (1–5) after their arrival in the host country. Furthermore the GP group showed a significant higher percentage of general family psychopathology (affecting all the members) during the present period in comparison with the BP group. We found also a correlation between birth-time of the GP and the period that their parents developed psychopathologie, which was not observed in the group of BP. The GP were born in Belgium or arrived in Belgium very young (less than 7 years old) namely during the period that their parents developed psychiatric pathology.

**Discussion:** From our results we can hypothesize that there is a correlation between the traumatic experience of migration with the observed development of psychiatric disorders in second generation Greek migrants in Belgium.

#### S141

##### The progress of psychiatric disorders among young second-generation Greek migrant in Belgium: a one year follow-up study

A Drossos<sup>1</sup>, I Nimatoudis<sup>2</sup>, B Mortreux<sup>2</sup>, JP Roussaux<sup>2</sup>, A Karavatos<sup>1</sup>

<sup>1</sup>Department of Psychiatry, Aristotle University of Thessaloniki, Thessaloniki, Greece; <sup>2</sup>Service de Psychopathologie, Cliniques Universitaires Saint-Luc, Université Catholique de Louvain, Bruxelles, Belgium

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**Background:** Several studies reported a higher rate of psychosis across both the first and the second generations of migrants patients. On the contrary, other investigators suggested that the mentioned higher rate of psychotic disorders could be an artefact produced mainly by misdiagnosis. The scope of the study was to investigate the above hypotheses by comparing the appearance and progress of psychiatric disorders of a second-generation Greek migrant group of patients (GP) with a Belgian patients group (BP).

**Material and Method:** Fifty young second-generation Greek migrant and fifty young Belgian patients, matched for the variables of age and gender, from the psychiatric emergency department of the hospital Saint-Luc, Université Catholique de Louvain located in Brussels, were included in our study. The patients were studied during a one year period according to the initial and finally diagnoses, the progressive of their symptomatology, the drug treatment and the psychiatric visits and problems.

**Results:** At the beginning of the study the percentage of the main aggregate diagnostic categories (psychotic disorders, neurotic disorders and behavioural problems) and the severity of the psychopathology was not differed between the two groups. After the one year follow up the GP group showed a marked improvement in their clinical symptomatology together with a statistical significant decreased of the percentage of the initial psychotic diagnoses. In contrast the BP group showed stabilization in initial diagnoses. There was also a stabilization of the drug therapy among the BP according to the initial diagnoses, which was not observed in the GP group.

**Discussion:** Our results are compatible with studies that points out a high percentages of misdiagnoses of psychotic disorders between the immigrants, mainly when cultural and demographic differences of migrants groups weren't taken into account during the initial evaluation of the patients.

#### S142

##### Neuropsychological and pragmatic assessment of arithmetical cognition in illiterates

I Nimatoudis<sup>1</sup>, X Seron<sup>2</sup>, G Leftheri<sup>2</sup>, A Tzavaras<sup>3</sup>

<sup>1</sup>Department of Psychiatry, Aristotle University of Thessaloniki, Thessaloniki, Greece; <sup>2</sup>Unité de Neuropsychologie Cognitive, Faculté de Psychologie et des Sciences de l'Education, Université Catholique de Louvain, Belgium; <sup>3</sup>Unit of Methodology, History and Theory of Sciences, University of Athens, Athens, Greece

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**Background:** It is well known that illiterate people despite the lack of schooling develop numerical and arithmetical skills. The purpose of this study was to examine numerical abilities in a sample of 31 illiterate females mean age 61.96 years. All the subjects had never received any other form of formal education of reading or writing, due to historical and social reasons.

**Material and Method:** Study I: Having excluded mental retardation and possible dementia, all the subjects were examined during study I with the "EC-301R" battery - version for illiterates (Deloche et. al., 1999), which consists of 10 simple tasks. Study II: In order to investigate the above mentioned ability we introduced 3 new subtests. An approximation test and two transcoding tests from Arabic numerals and orally given numerals respectively to black and white photocopies of original banknotes.

**Results:** Study I: Our main findings conclude that illiterate subjects are able to perform counting tasks, have knowledge of number sequencing, can compare magnitudes of numerals and can operate simple addition and subtraction. They are also able to recognise the Arabic numbers up to ten (100% of subjects) and to some extent up to twenty (80–90% of subjects), but this ability is not applicable for numbers larger than 100. Finally no correlation was noticed between any of the subtests and the age parameter. From our results we noticed an unexpected capacity of the illiterate subjects to handle money in a range of amounts which far exceed their numerical abilities. They were able to give the correct answer from orally given numerals to original banknotes (95.66% accuracy).

Study II: All the subjects were able to give the correct approximate answer in original banknotes. In transcoding from orally given numerals to B/W photocopies of banknotes their performance dropped dramatically to 30.5% in comparison with the same subtest with original coloured banknotes (95.66% accuracy).

**Discussion:** We hypothesise that the colour of the banknotes is a property "symbol" which can potentially mediate in illiterate subjects the transcoding of the verbal form of numerals into banknotes circumventing the Arabic code.

### S143

#### Clinical and functional status, weight and sexual adverse events over the first six months of treatment: Greek results from the schizophrenia outpatient health outcomes (SOHO) study

V Mavreas<sup>1</sup>, C Touloumis<sup>2</sup>, D Novick<sup>3</sup>, S Tziveleki<sup>3</sup> on behalf of the SOHO Study Group<sup>4</sup>

<sup>1</sup>University of Ioannina, Greece; <sup>2</sup>Athens Psychiatric Hospital, Greece; <sup>3</sup>Eli Lilly and Company, Windlesham, UK; <sup>4</sup>J Alonso (ES), I Gasquet (FR), H Kristensen (DK), PB Jones (UK), M Knapp (UK), JP Lepine (FR), V Mavreas (GR), D Murray (IE), d Naber (DE), P Pancheri (IT), CJ Slooff (NL), JM Teixeira (PO)

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**Background:** The Schizophrenia Outpatient Health Outcomes (SOHO) study is a 3-year, prospective, outpatient, observational study of health outcomes associated with antipsychotic treatment. 10,972 patients were enrolled upon initiation of or change to a new antipsychotic in actual outpatient treatment settings.

**Material and Methods:** Response in positive, negative, cognitive, depressive and overall symptoms from baseline to 6 months, as measured using CGI (Clinical Global Impression) scales, was assessed for patients enrolled in SOHO. Mean change in weight and Body Mass Index (BMI) from baseline to 6 months was also assessed. Sexual adverse events were collected by the physician using a patient-reported questionnaire with three options (no problems, some problems and unable to perform).

**Results:** 6-month data had been collected on 620 Greek patients with schizophrenia. 579 patients were eligible for the analyses of the outcomes. Substantial reductions in symptomatology from baseline to 6 months were seen in this sample across all antipsychotics. Mean change in positive symptoms on the CGI-S was less for risperidone-treated patients ( $-1.18 \pm 1.30$ ) than for patients treated with other antipsychotics (ranged from  $-1.21 \pm 1.47$  for patients taking quetiapine to  $-1.63 \pm 1.96$  for patients taking oral typical antipsychotics). Mean change in negative symptoms was greater for olanzapine ( $-1.46 \pm 1.22$ ) and quetiapine ( $-1.24 \pm 1.15$ ) treated patients than for patients treated with oral typical ( $-0.78 \pm 1.42$ ) and patients taking risperidone ( $1.04 \pm 1.08$ ). Mean change in overall symptoms was less for patients treated with risperidone ( $-1.13 \pm 1.06$ ) and quetiapine ( $-1.17 \pm 1.10$ ) than for patients treated with olanzapine and oral typical antipsychotics. EQ-VAS health state improved across all cohorts with the biggest improvements seen in patients treated with olanzapine ( $23.02 \pm 20.74$ ) and oral typical antipsychotics ( $18.57 \pm 23.37$ ). Mean weight change between baseline and 6 months, across cohorts, ranged from  $1.13 \pm 6.64$  kg for quetiapine-treated patients to  $3.37 \pm 4.60$  kg for olanzapine-treated patients. Mean change in BMI between baseline and 6 months ranged from  $0.35 \pm 2.19$  kg/m<sup>2</sup> for quetiapine-treated patients to  $1.15 \pm 1.55$  kg/m<sup>2</sup> for olanzapine-treated patients. The proportion of patients having problems with their sexual functioning was greater in the quetiapine (79.3%), and oral typical (78.4%) cohorts than in the risperidone (69.2%) and olanzapine (54.9%) cohort.

**Discussion:** Substantial improvements in clinical and functional status were seen from baseline to 6 months across all

antipsychotic treatment cohorts. Quetiapine- and risperidone-treated patients experienced the smallest reductions in positive symptoms. Patients treated with olanzapine experienced larger reductions in negative symptoms compared to patients treated with other antipsychotics which in turn may have led to the greater improvements in EQ-VAS status compared to patients treated with other antipsychotics. From baseline to 6 months, weight gain occurred across all antipsychotic treatment cohorts with olanzapine-treated patients experiencing more weight gain than patients treated with other antipsychotics. Finally, findings suggest that patients in the olanzapine and risperidone treatment cohorts are less likely to develop problems with their sexual functioning compared with patients in the other antipsychotic treatment cohorts.

### S144

#### Change in clinical status, social functioning, weight and sexual adverse events over the first 6 months of treatment: pan-european results from the schizophrenia outpatient health outcomes (SOHO) study

V Mavreas<sup>1</sup>, D Novick<sup>2</sup>, S Tziveleki<sup>2</sup>, M Ratcliffe<sup>2</sup> on behalf of the SOHO Study Group<sup>3</sup>

<sup>1</sup>University of Ioannina, Greece; <sup>2</sup>Eli Lilly and Company, Windlesham, UK; <sup>3</sup>J Alonso (ES), I Gasquet (FR), P Handest (DK), PB Jones (UK), M Knapp (UK), JP Lepine (FR), V Mavreas (GR), D Murray (IE), D Naber (DE), P Pancheri (IT), CJ Slooff (NL), JM Teixeira (PO)

Annals of General Hospital Psychiatry 2003, 2(Suppl 1):S144

**Background:** The Schizophrenia Outpatient Health Outcomes (SOHO) study is a 3-year, prospective, outpatient, observational study of health outcomes associated with antipsychotic treatment. 10,972 patients were enrolled upon initiation of or change to a new antipsychotic in actual outpatient treatment settings.

**Material and Methods:** Response in positive, negative, cognitive, depressive and overall symptoms from baseline to 6 months, as measured using CGI (Clinical Global Impression) scales, was assessed for patients enrolled in SOHO. Mean change in weight and Body Mass Index (BMI) from baseline to 6 months was also assessed. Sexual adverse events were collected by the physician using a patient-reported questionnaire with three options (no problems, some problems and unable to perform). A logistic regression model, adjusted for baseline covariates, compares the odds responding/having sexual adverse events in the olanzapine cohort with each of the other cohorts

**Results:** 6-month data had been collected on 9,028 patients with schizophrenia. Olanzapine (58%), clozapine (59%) and two or more antipsychotics (2+APs; 56%) cohorts had the highest proportion of patients who responded in terms of their overall symptoms [Other cohorts (range depot (41%) to risperidone (51%)]. The odds of responding in overall symptoms, at 6 months, in the olanzapine cohort compared with the other treatment cohorts were: risperidone (Odds Ratio: 1.32; 95% CI: 1.16–1.49), quetiapine (1.77; 1.48–2.12), amisulpride (1.60; 1.22–2.08), oral typical (1.60; 1.32–1.92) and depot typical (1.86; 1.49–2.32) cohorts. No statistical differences were observed between the olanzapine cohort and the clozapine (0.87; 0.68–1.13) and 2+APs (0.89; 0.65–1.22) cohorts. Similar results were observed for response in positive, negative, cognitive and depressive symptoms and the EQ-VAS health state. Social functioning improved across

all cohorts; the odds of being socially active in the olanzapine cohort compared to the other treatment cohorts were: risperidone (1.28; 1.06–1.55), quetiapine (1.66; 1.28–2.15), oral typical (1.71; 1.29–2.26) and depot typical (1.59; 1.15–2.21) cohorts. No statistical differences were observed between the olanzapine cohort and the amisulpride (1.15; 0.73–1.79), clozapine (1.25; 0.87–1.80) and 2+AP's (0.71; 0.44–1.15) cohorts.

Mean weight change between baseline and 6 months across cohorts ranged from  $0.7 \pm 5.0$  kg for quetiapine treated patients to  $2.4 \pm 4.9$  kg for olanzapine treated patients. Mean change in BMI between baseline and 6 months ranged from  $0.3 \pm 1.8$  kg/m<sup>2</sup> for quetiapine treated patients and  $0.3 \pm 1.7$  kg/m<sup>2</sup> for oral typical treated patients to  $0.8 \pm 1.7$  kg/m<sup>2</sup> for olanzapine treated patients and  $0.8 \pm 1.9$  kg/m<sup>2</sup> for clozapine treated patients. The odds of patients having problems with their sexual functioning in the olanzapine cohort compared to the other treatment cohorts were: risperidone (odds ratio: 0.71; 95% CI: 0.61–0.82), oral typical (0.66; 0.53–0.82) and depot typical (0.68; 0.52–0.90) cohorts. No statistically significant differences were observed between the olanzapine cohort and the quetiapine (0.96; 0.78–1.19), amisulpride (0.78; 0.56–1.08), clozapine (1.13; 0.85–1.50) and 2+AP's (0.73; 0.50–1.07) cohorts.

**Discussion:** After 6 months of treatment, patients in the olanzapine cohort were more likely to improve in terms of clinical status and social functioning compared with patients in the risperidone, quetiapine, oral typical and depot typical cohorts. No differences were observed between the olanzapine and the clozapine and 2+AP's cohorts. From baseline to 6 months, weight gain occurred across all antipsychotic treatment cohorts with olanzapine treated patients experiencing more weight gain than patients treated with other antipsychotics. Findings suggest that patients in the olanzapine, quetiapine, amisulpride, clozapine and 2+AP's are less likely to develop problems with their sexual functioning compared with patients in the other cohorts.

#### **S145** **Antidepressant-associated mania in a patient with social anxiety disorder**

C Andreou, V Tsipropoulou, V Bozikas, F Bascialla, S Pitsavas, A Karavatos

*1<sup>st</sup> Department of Psychiatry, Aristotle University of Thessaloniki, Greece*

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**Background:** The relation between anxiety and bipolar disorders has recently drawn much interest, as a growing number of studies report higher than expected comorbidity rates of bipolar (especially bipolar II) disorder with panic disorder (PD), obsessive compulsive disorder (OCD) and social anxiety disorder (SP).

**Material and Methods:** We present a case of antidepressant-associated mania in a patient with social anxiety disorder.

**Results:** The patient received treatment with paroxetine, upon which his anxiety symptoms improved greatly; however, two months after the initiation of treatment, the patient developed a manic episode with elevated mood, increased self-esteem, hyperactivity, increased sexual activity and reckless behaviour, resulting in the patient being dismissed from his job and creating large debts. All these symptoms gradually subsided after the discontinuation of paroxetine; unfortunately, this led to the re-emergence of anxiety symptoms, this time complicated by depression.

**Discussion:** In this context, cases of antidepressant-induced mania occurring in patients with anxiety disorders are of great interest, since they could be interpreted as evidence for a connection between the two disorder spectrums. So far, such cases have been described in PD and OCD patients; one additional study reports the frequent development of hypomania in SP patients successfully treated with monoamine oxidase inhibitors.

#### **S146** **The fertile controversy between Camillo Golgi and Ramon y Cajal about the structure of the nervous system**

C Andreou, V Bozikas, A Karavatos

*1<sup>st</sup> Department of Psychiatry, Aristotle University of Thessaloniki, Greece*

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**Background:** The evolution of scientific knowledge often occurs through intense dispute. An extreme, rational interpretation of science does not appear to supply a satisfactory answer to this phenomenon, especially when it comes to explaining the stubborn attachment of many scientists to obsolete positions against others supporting novelty.

**Discussion:** A characteristic example of such a controversy is the debate between Camillo Golgi and Santiago Ramon y Cajal at the turn of the 20<sup>th</sup> century, when the nervous system was still considered as a network formed by anastomosing nerve cells, in analogy to the vascular network. With his revolutionary staining method for visualizing individual neurons, Golgi pioneered a new era in the study of the central nervous system. However, it was Cajal who took full advantage of the potentials of the new method, offering a sound alternative interpretation of the images obtained. His work established the neuronal structure of the nervous system; Golgi himself continued to support the reticular theory, in spite of growing evidence for the opposite. However, the contributions of both researchers are equally significant, as they formed the basis, upon which our current knowledge about the structure and function of the nervous system was built, awaiting for future reversals. The exciting history of the synapse continues, reminding us that, in the sense that the etymology of the greek word aletheia=truth (negative prefix "a" + "lethe"=oblivion) implies, science never possesses THE truth, but rather produces truths, i.e. facts not to be forgotten for a long time.

#### **S147** **The beginnings of clinical neurochemistry: dopamine and Parkinson's disease**

C Andreou, I Savvidou, P Petrikis, A Karavatos

*1<sup>st</sup> Department of Psychiatry, Aristotle University of Thessaloniki, Greece*

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**Background:** In the middle of the 20<sup>th</sup> century, chemical neurotransmission in the brain was still an issue of debate. In this context, research on Parkinson's disease played a significant role, as it led beyond the simple identification of a neurotransmitter to the formation of an articulate clinicopathological model and a rational therapeutic approach.

**Discussion:** A. Carlsson was the first to suggest a neurotransmitting role for dopamine in 1955; a few years later, his

team observed the great dopamine concentrations in the basal ganglia. The clinical implications of this finding were soon realized - it was already known since the beginning of the century that the basal ganglia are involved in Parkinson's disease. The studies of O. Hornykiewicz and T. Sourkes suggested a dopamine deficiency in Parkinson's patients, and in the mid-1960's considerable evidence was gathering in favor of the existence of a nigrostriatal dopaminergic pathway, involved in the regulation of motility. The renewal of the pharmaceutical treatment of the disease followed closely: Hornykiewicz and Birkmayer (1960), and almost concurrently Sourkes and Barbeau (1962), conceived the idea of administering L-DOPA in patients with Parkinson's disease, with spectacular results. The treatment of Parkinson's disease evolved in the following years, with optimisation of administration regimens by Cotzias et al (1967), as well as with the introduction of decarboxylase inhibitors. In the mid-1960's the concept of dopamine as a neurotransmitter had reached mainstream status, and the nigrostriatal pathway had become a model for the study of central synapses.

#### S148 Psychopathological indices in patients of the gastroenterological out-patient department which underwent endoscopic investigation for the first time

A Iacovides, S Kleanthous, S Stefanidis, E Giannoulis, KN Fountoulakis, G Kaprinis

3rd Department of Psychiatry and Endoscopic Laboratory, 1st Department of Pathology, Aristotle University of Thessaloniki, Greece

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**Background:** The aim of the study was to compare the emotional condition, before the endoscopy, between the patients which underwent colonoscopy or gastroscopy for the first time.

**Material and Methods:** Forty patients took part in the study (20 patients for gastroscopy and 20 for colonoscopy). Each group included 10 males and 10 females. Their age was  $42.1 \pm 15.46$  for the colonoscopy group and  $60 \pm 16.68$  years for the gastroscopy group. The methodological tools we used for the investigation were: 1) A specific questionnaire concerning the sociodemographic characteristics and attitudes 2) The State-Trait Anxiety Inventory, STAI-Y-I. 3) The World Health Organization-Five scale psychological General Well-Being Schedule. 4) The Eysenck Personality Questionnaire, EPQ and 5) The SCL-90-R.

**Results:** The majority of the patients that underwent colonoscopy preferred the colonoscopist to be of the same sex. On the contrary, most of those patients that underwent gastroscopy expressed a preference for a doctor of the opposite sex. In both groups, patients expressed their wish to go on the procedure of endoscopy under sedation because of fearing of the pain. There were no significant differences concerning the psychopathological scales between the two groups. Also, their findings were similar to those expected from the general population.

**Discussion:** The results indicate the necessity of psychological preparation of the patients attending for endoscopic investigation for the first time in endoscopy laboratory.

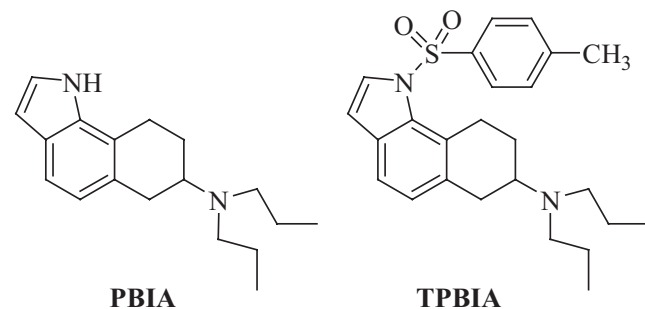
#### S149 Behavioural and antioxidant activity of a tosylbenz[g]indolamine derivative. A proposed better profile for a potential antipsychotic agent

CH Zika, I Nicolaou, A Gavalas, GV Rekas, EK Tani, VJ Demopoulos

Department of Pharmaceutical Chemistry, School of Pharmacy, Aristotle University of Thessaloniki, Thessaloniki, 54124 Greece

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**Background:** It is known that tardive dyskinesia (TD) is a major limitation of chronic antipsychotic drug therapy at least with older (typical) antipsychotics. Atypical antipsychotics possess a lower extrapyramidal side effects liability. However, they brought about various side effects such as weight gain, hyperglycemia, cholesterol level elevation, and QT interval prolongation. Therefore, it becomes interesting to design compounds that maintain antipsychotic efficacy and simultaneously could be free of TD risk. In a previous study we have shown that an indolamine molecule (PBIA, Figure 1) expresses a moderate binding affinity at the dopamine  $D_2$  and serotonin  $5-HT_{1A}$  receptors in in vitro competition binding assays. In the present work, we tested its p-toluenesulfonyl derivative (TPBIA) for behavioral effects in rats, related to interactions with central dopamine receptors and its antioxidant activity, since free radical processes are implicated in the pathophysiology of a number of CNS disorders, including TD.



**Figure 1**  
Indolamine molecule (PBIA) and its p-toluenesulfonyl derivative (TPBIA).

**Material and Methods:** The experimental animals (adult male Fischer-344 rats) were grouped as: i) Untreated rats: TPBIA was administered i.p. in various doses and immediately afterwards the rats were placed individually in the activity cage and their motor behaviour was recorded for the next 30 min, ii) Apomorphine-treated rats: the motor activity was measured as described above in the rats treated with apomorphine ( $1 \text{ mg kg}^{-1}$ , i.p.) 10 min after the administration of TPBIA. The antioxidant potential of TPBIA was investigated in the model of in vitro non enzymatic lipid peroxidation.

**Results:** It was found that: i) In non-pretreated rats, TPBIA reduces the activity by 39 and 82% respectively, ii) In apomorphine pretreated rats, TPBIA ( $80 \mu\text{mol/kg}$ ) reverses the hyperactivity and stereotype behaviour induced by apomorphine. Also, it was found that TPBIA completely inhibits the peroxidation of rat liver microsome preparations at concentrations of 0.5, 0.25 and 0.1 mM.

**Discussion:** TPBIA might have therapeutic potential in the treatment of psychosis, due to its dopamine antagonistic activity in the central nervous system. In addition, its antioxidant effects is a desirable property, since tardive dyskinesia—a neuroleptics' side effect—has been attributed, at least in part, to oxidative stress.

### S150

#### Cellular mechanisms underlying the effects of an early experience on cognitive abilities and affective states

E Garoflos, T Panagiotaropoulos, S Pondiki, A Stamatakis, H Philippidis, F Stylianopoulou  
Lab. Biology-Biochemistry, University of Athens,  
Papadiamantopoulou 123, 115 27 Athens, Greece

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**Background:** In the present study we investigated the effects of neonatal handling, an animal model of early experience, on spatial learning and memory, as well as on hippocampal GR, MR, 5HT1A receptors, BDNF, and circulating leptin levels, of male rats.

**Method:** Spatial learning and memory following an acute restraint stress (30 min) were assessed in the Morris water maze. Hippocampal GR, MR and BDNF levels were determined immunocytochemically. 5HT1A receptors were quantified by in vitro binding autoradiography. Circulating leptin levels were measured by RIA. Data were statistically analyzed by ANOVA.

**Results:** Neonatal handling increased the ability of male rats for spatial learning and memory. It also resulted in increased GR/MR ratio, BDNF and 5HT1A receptor levels in the hippocampus. Furthermore, leptin levels, body weight and food consumption during chronic forced swimming stress were reduced as a result of handling.

**Discussion:** Neonatal handling is shown to have a beneficial effect in the males, improving their cognitive abilities. This effect on behavior could be mediated by the handling induced increase in hippocampal GR/MR ratio and BDNF levels. The handling induced changes in BDNF and 5HT1A receptors could underlie the previously documented effect of handling in preventing "depression". Furthermore, handling is shown to prevent other maladaptive states such as stress-induced hyperphagia, obesity and resistance to leptin.

### S151

#### Increased suicidal risk amongst aging holocaust survivors

Y Barak<sup>1</sup>, D Aizenberg<sup>2</sup>, H Szor<sup>1</sup>, M Swartz<sup>1</sup>, R Maor<sup>1</sup>, HY Knobler<sup>3</sup>

<sup>1</sup>Abarbanel Mental Health Center, Bat-Yam, Israel; <sup>2</sup>Geha Mental Health Center, Petah-Tikva, Israel; <sup>3</sup>Medical Corps, IDF, Israel

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**Background:** Suicide rates are higher in the elderly than in any other phase of the life-cycle. Trauma related syndromes have demonstrated a high degree of associated suicidality. The majority of World War II (WWII) veterans and Holocaust survivors still define their war experiences as being the: "most significant stressors" of their lives. Aging of survivors is frequently associated with reactivation of traumatic syndromes, physical disorders, loss and psychological distress possibly increasing the risk of suicide. The aim of the present study was to investigate amongst a large cohort of elderly Holocaust survivors whether their WWII experiences confer an increased risk of suicidal behavior.

**Material and Methods:** All medical records of elderly patients admitted to a psychiatric hospital in Israel during a 5-year period were retrospectively evaluated. Suicidal patients were compared to patients who had not attempted suicide.

**Results:** Of 921 eligible patients, 135 (14.6%) had attempted suicide in the month prior to admission. There were 374 Holocaust survivors in our series. Ninety Holocaust survivors (24%) who had attempted suicide are the index group. Among the 502 patients with no WWII experience 45 had attempted suicide (8.2%). The risk of attempted suicide amongst Holocaust survivors was significantly increased, Odds Ratio=3.53; 95% CI: 1.8–5.4.

**Discussion:** Although these findings are from a highly selected sample we suggest that aging Holocaust survivors of WWII are at increased risk of attempting suicide. The growth of the elderly population of whom many had had traumatic life experiences emphasizes the need to implement preventive strategies so that suicidal risk may be contained.

### S152

#### Effects of discontinuation of long-term anticholinergic treatment in elderly schizophrenia patients

T Drimer<sup>1</sup>, B Shahal<sup>2</sup>, Y Barak<sup>1</sup>

<sup>1</sup>Abarbanel Mental Health Center, Bat-Yam, Israel; <sup>2</sup>Rambam Hospital, Haifa, Israel. Affiliated with the Sackler Faculty of Medicine, Tel-Aviv University, Israel

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**Background:** The use of anticholinergic medications (ACM) in psychiatry is mainly for the treatment of D<sub>2</sub> blocking agents side-effects. The group most likely to be exposed to ACM are the elderly. However, the ACM themselves are not without adverse effects and in the elderly cognitive and memory impairments have been emphasized. The aim of this study was to evaluate the effects of discontinuation of ACM on cognitive functions in a group of elderly chronic schizophrenia patients.

**Material and Methods:** Twenty-seven elderly patients (age 60 years or older) diagnosed as suffering from schizophrenia (DSM-IV) and receiving ACM in addition to antipsychotic treatment were enrolled. Before and after ACM was discontinuation the Alzheimer's disease Assessment Scale - Cognitive subscale (ADAS-Cog) was administered.

**Results:** Twenty-one patients completed the study. All were receiving biperiden, 2–6 mg daily prior to the study. Significant improvement in the ADAS-Cog total score was demonstrated (p<0.03) as well as in the ideational praxia and orientation subscales. Improvement was correlated with the dose of biperidin administered. No adverse events or emergent extra-pyramidal symptoms were noted.

**Discussion:** Discontinuation of ACM may be warranted in chronic long-stay schizophrenia patients as it may improve cognitive functioning with no adverse effects

### S153

#### Venlafaxine for the treatment of depressive episode during the course of schizophrenia

D Mazeh, B Shahal, R Saraf, Y Melamed

Abarbanel Mental Health Center, Bat-Yam and Sackler Scl Med, Tel-Aviv Univ, Israel

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**Background:** The emergence of depression in the course of schizophrenia is common and arouses much interest and

therapeutic concern. It has been associated with a less-favorable prognosis and increased incidence of suicide. However, relatively few treatment studies have been performed in this area. The use of a combination of antidepressants and antipsychotic agents is controversial.

**Material and Methods:** We report an open-label study carried out to evaluate the efficacy of the addition of venlafaxine in schizophrenia patients treated with antipsychotics and diagnosed with concurrent depressive episode (DSM-IV criteria). Patients (n=19) who did not show spontaneous improvement after 4 weeks were assigned to a six-week trial with add-on venlafaxine. Patients were evaluated at a one-week interval with the HAM-D, the Positive and Negative Syndrome Scale, and the Clinical Global Impression Scale.

**Results:** All 19 patients had completed the six week trial. 14 patients (74%) showed significant improvement measured with HAM-D and CGI. The mean venlafaxine dose was 146 mg/day (range: 75–300 mg/d). In most patients there was a parallel decrease in psychotic symptoms.

**Discussion:** We demonstrate that venlafaxine is effective in the treatment of depression in patients with schizophrenia without causing exacerbation of psychosis.

#### S154

##### Does depression correlates with elderly patient satisfaction and perceived quality of hospital care?

V Raftopoulos

Department of Nursing, Faculty of Health Sciences, Technical Education Institute of Larissa Greece

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**Background:** Patient satisfaction with quality of hospital care is a dominant concept with respect to the implementation of quality assurance and quality improvement programs. Elderly patients are the central users of health care services and therefore the assessment of elderly perceived quality of hospital care is important for strategy planning and evaluation of health care services. The relevance of patient satisfaction studies is often questioned because of conceptual and methodological problems due to the underused qualitative research. The aim of this research was to develop global scales that, in comparison with existing patient satisfaction scales would: (1) be valid and reliable, assessing elderly patients satisfaction with quality of hospital care, based on the existing literature evidence, on results of a qualitative research and on a previous developed conceptual framework, (2) measure perceived quality of hospital care from the perspective of elderly patients and (3) explore how elderly patients' depression (by using Geriatric Depression Scale) correlates with patient satisfaction and perceived quality of hospital care.

**Material and Methods:** 380 elderly patients from 8 Greek hospitals participated to the study (209 male, 171 female). The mean age of the sample was 73.07 ± 6.04 years. We evaluated the taxonomy and the feasibility of the scales using reliability analyses. We used a combination of qualitative and quantitative research methods.

**Results:** The vast majority of elderly patients were somewhat satisfied with quality of hospital care (90.3%), of food (79.3%), of medical (95.6%) and nursing care (94%). Regarding the hospital services, elderly patients expressed also dissatisfaction with hospital care (0.8%), food (9.6%), medical (0.5%) and nursing care

(2.9%). Among the depressed elderly patients, a high percentage (82.8%) was satisfied with global hospital care, with food (73.3%), medical (93.1%) and nursing care (93.2%). Dissatisfaction was expressed with global quality of hospital care (0.7%), of food (1.4%), medical (1.4%) and nursing care (0.1%). Elderly patients' depression correlates negatively with (a) perceived quality of hospital care, of medical and nursing care, (b) global satisfaction with care and hospital food, and (c) their expectations from hospital care. For the depressed elderly patients their level of global satisfaction with hospital care, food, medical and nursing care was greater than their expectations. With increasing age, elderly patients express greater mean global satisfaction with hospital and nursing care.

**Discussion:** Elderly patient depression affects perceived quality of hospital care and satisfaction. Global satisfaction with provided nursing care is the main predictor of global satisfaction with hospital care, between the non-depressed elderly patients. On the contrary, in the sample of the depressed elderly patients, the main predictor is the global satisfaction with medical care. Global perceived quality of hospital care predicts more, global satisfaction with hospital care.

#### S155

##### Neuronal morphology of nucleus accumbens-drug addicted brain region

J Tosevski<sup>1</sup>, S Malobabic<sup>2</sup>, A Orologas<sup>3</sup>,

J Mojsilovic-Petrovic<sup>4</sup>, M Sazdanovic<sup>1</sup>, C Alexopoulos<sup>5</sup>

<sup>1</sup>Institute of Anatomy, School of Medicine Kragujevac,

Svetozara Markovica 69, 34000 Kragujevac, Serbia and

Montenegro; <sup>2</sup>Institute of Anatomy, School of Medicine,

Belgrade, Serbia and Montenegro <sup>3</sup>University department of

neurology, Aristotle University of Thessaloniki, Greece;

<sup>4</sup>Institute of Biological Sciences, National Research Council,

Ottawa, Canada; <sup>5</sup>Clinic of Neurology, School of Medicine,

Kragujevac, Serbia and Montenegro

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**Background:** Nucleus accumbens is highly drug addicted brain region, related with many others.

**Material and methods:** The morphology of neurons in the nucleus accumbens was studied on frontal and sagittal sections of 15 human brains by Golgi method.

**Results:** We classified these neurons in the human nucleus accumbens, according to their morphology and size into four types: Type I a – fusiform neurons, Type I b subtype – fusiform neurons with lateral dendrite, Type II multipolar neurons, Type III-piriform neurons and Type IV pyramidal-like neuron.

**Discussion:** Two regions of human nucleus accumbens could be clearly recognized on Golgi preparations each containing different predominant neuronal types. Central part of nucleus accumbens, core, had a low density of impregnated neurons with predominant type IV pyramidal-like neurons enriched with spines on secondary branches. Contrary to the core, peripheral regions, shell of nucleus, had a high density of impregnated neurons predominantly contained types I (both subtypes of fusiform), and type III (piriform) neurons, which all were rich in spines on secondary and third dendrite branches. Our results indicated great morphological variability of human nucleus accumbens neurons and their phylogenetically developing potential. This suggests further investigations and clarifying clinical significance of this important brain region in drug addiction.