

Supplementary file #1 for “ABiMed : An intelligent and visual clinical decision support system for medication reviews and polypharmacy management”

21 janvier 2025

1 Patient data tab



Patient dataInterviewInteractionsAdverse effects ⚡Posologies ⚡Stopp/Start ⚡PreconizationsChatSynthesis ☒ INN ?

Test patient (woman, 83 year old)

Fix extraction errors:

Current treatment		Posology	Start	Indications	Sources	
1	calcium vit D3 500mg/1000ui cpr	1 on morning	18/1/2022	Indication???	Entered by pharmacist	Add
2	paracetamol 500mg cpr	2 on morning, noon a...	18/1/2022	Indication???	Health insurance	Modify
3	domperidone 10mg cpr	1 in case of nausea	2/2/2020	Indication???	GP record	Remove
4	escitalopram 10mg cpr	1 on evening	5/2/2018	Épisodes dépressifs	GP record	
5	spironolactone altizide cpr	1 on morning	2/2/2014	Hypertension essenti...	GP record	
6	pravastatine 20mg cpr	1 on morning	12/5/1997	Indication???	GP record	

Clinical conditions		Start	End	Sources	
1	Tobacco use	—	—	Entered by Pharmacist	Add
2	Anxiety	—	—	Entered by pharmacist	Modify
3	Fracture of a dorsal vertebra	7/1/2022	—	GP record	Remove
4	Depression	2/4/2018	—	GP record	
5	Hypertension	21/3/2014	—	GP record	

Exams		Value	System	Measure	Date	Sources	
1	Sodium	129	Point	Moles/Volume	27/5/2023	GP record	Add
2	Potassium	4,8	Point	Moles/Volume	27/5/2023	GP record	Modify
							Remove

Screenshot of the patient data tab.

2 Interview tab



Patient data

Interview

Interactions

Adverse effects

Posologies ⚡

Stopp/Start

Preconizations

Chat

Synthesis

INN ✓ ?

Problems encountered

	Problems	Detail	Comment	Start	End	Sources	Add
1	Suspected drug adverse event	Somnolence		1/6/2023	—	Pharmacis	Modify
							Remove

Patient lifestyle

☐ car driving

☐ tobacco

☐ alcohol

☐ drug consumption

Important clinical conditions (for Stopp/Start)

Warning: the list is dynamic and evolve according to the patient profile (drugs, conditions already checked,...).

Nervous system

☐ Alzheimer disease

☐ Lewy body dementia

☐ Parkinson disease

☐ restless leg syndrome

Sensory

☐ primary open-angle glaucoma

Digestive

☐ GERD or peptic stenosis

☐ constipation

Endocrine, metabolism and nutrition

☐ diabetes

Genital and reproduction

☐ atrophic vaginitis

Urinary

☐ dysuria or prostatism

Cardiovascular

☐ atrial fibrillation

☐ cardiac failure

☐ coronary, cerebral, or peripheral vascular disease

Respiratory

☐ asthma or COPD

☐ chronic hypoxia

Musculoskeletal

☒ fragility fracture :

Fracture of thoracic vertebra ▾

☐ gout

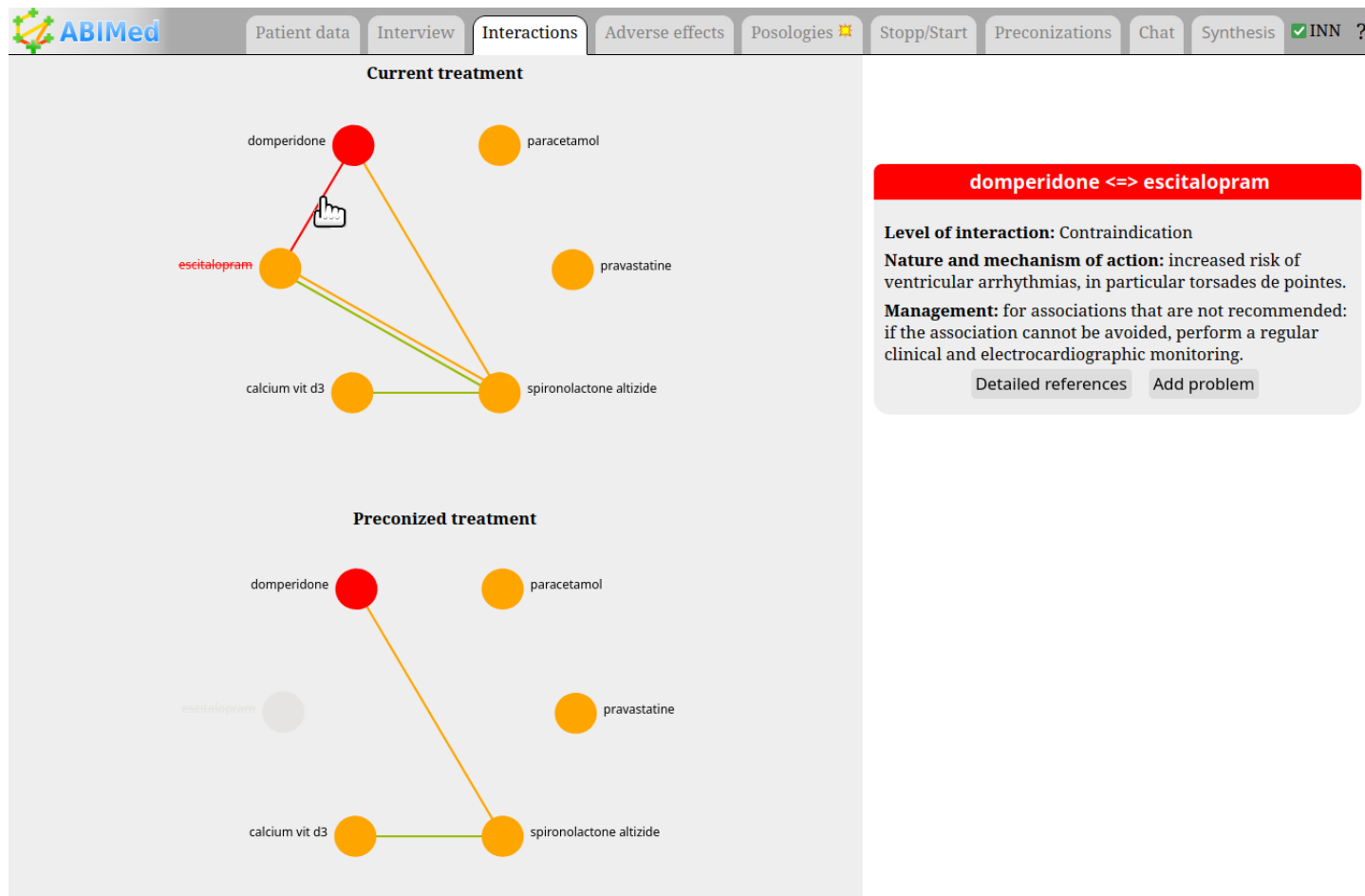
☐ rheumatoid arthritis

Others

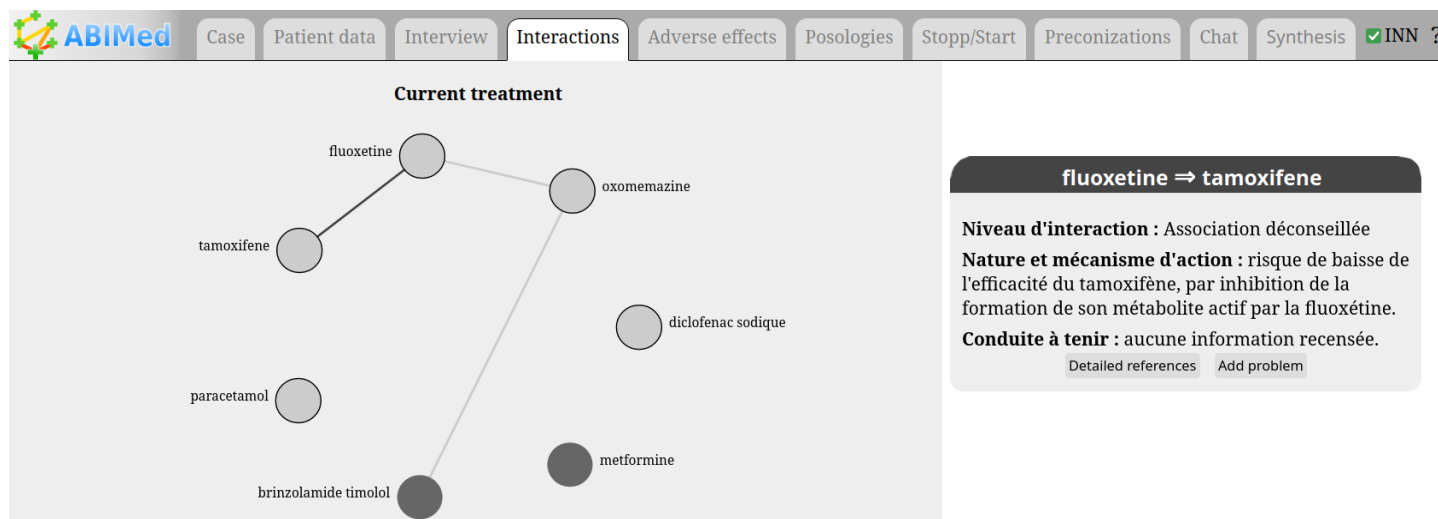
☐ pain

Screenshot of the interview tab.

3 Interaction tab

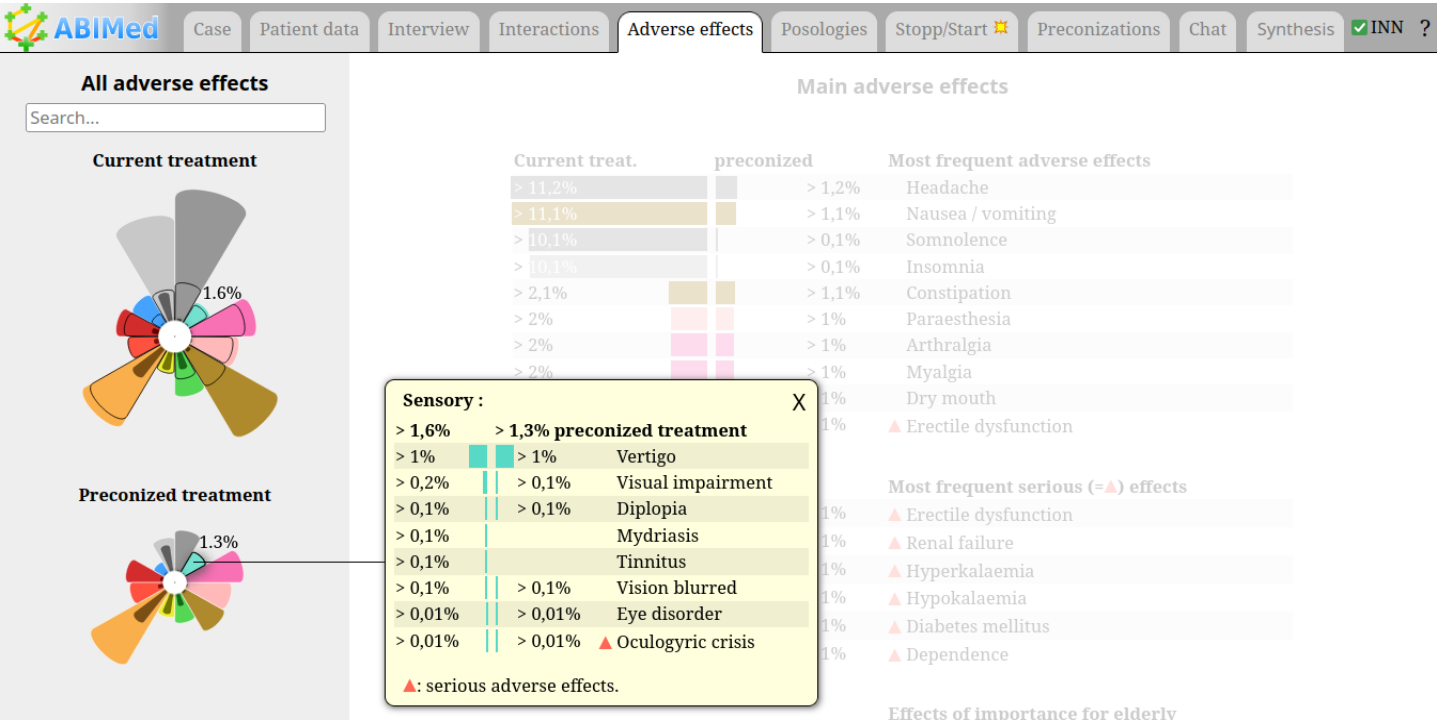
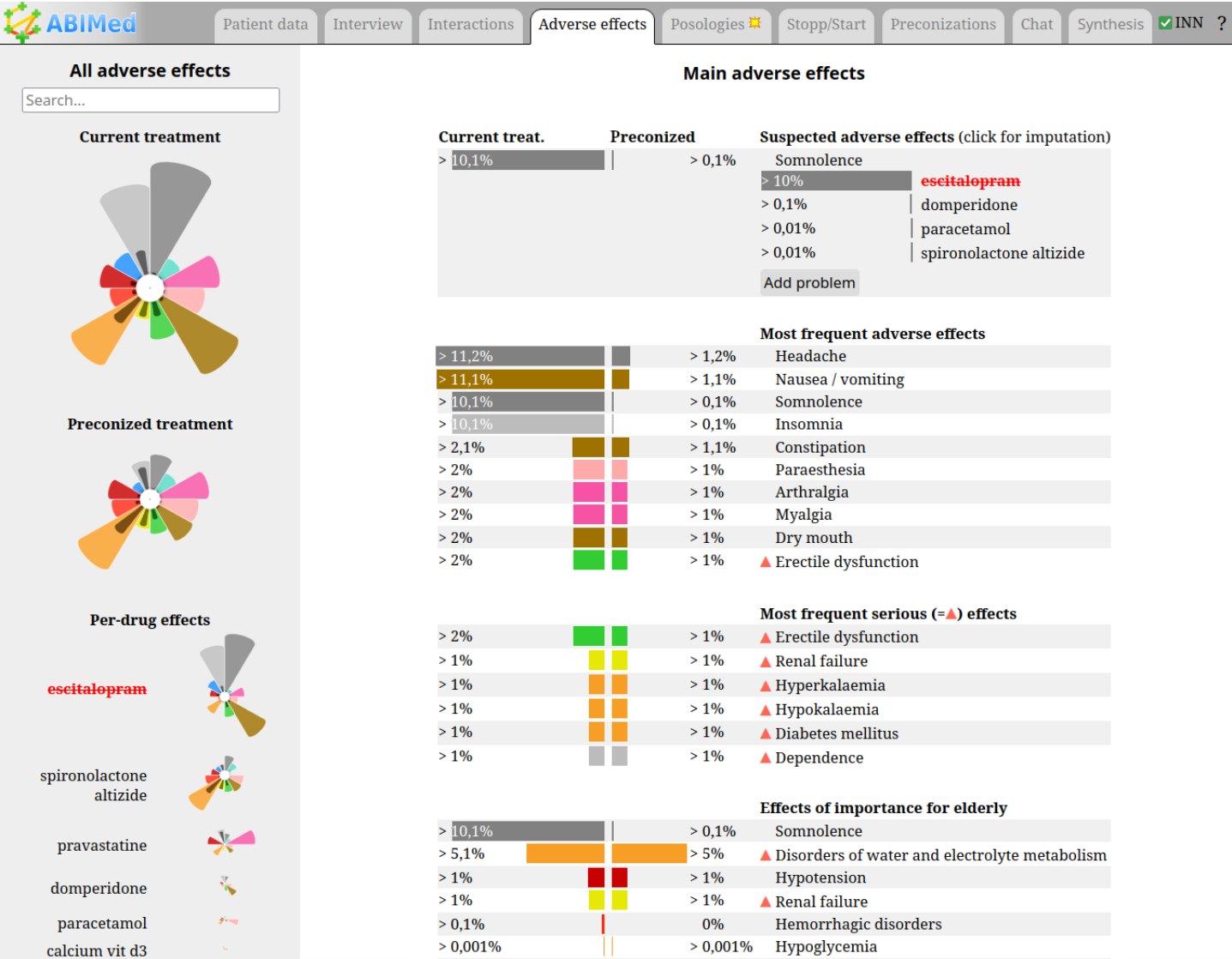


Screenshot of the interaction tab. The user preconized to deprescribe escitalopram, thus we are here in comparative mode. The user clicked on the domperidone-escitalopram interaction, which is displayed on the right.



Screenshot of the interaction tab, in color-blind mode.

4 Adverse effects tab



Two screenshots of the adverse effect tab.

5 Posology tab



Patient data
Interview
Interactions
Adverse effects
Posologies
Stopp/Start
Preconizations
Chat
Synthesis
INN
?

☐ hepatic failure
☐ renal failure
Renal clearance: (non available) ml/min

Drug	Current posology	Posology from SPC (considering indication, association, clearance)	Preconized posology	Day dose
calcium vit D3 500mg/1000ui cpr	1 on morning	<u>For vitamin-calcium deficiency, vitamin-calcium deficiency, osteoporosis, osteoporosis or osteoporosis:</u> usual dose: 1 tablet(s)/day, 1/day	1 on morning	calcium carbonate _____ 500 mg colecalfiferol _____ 1000 ui
paracetamol 500mg cpr	2 on morning, noon and evening	<u>For pain or febrile state (symptomatic treatment, (from 50 kg and mild/moderate hepatic insufficiency) or (less than 50 kg and no/mild/moderate hepatic insufficiency):</u> usual poso: adapt the poso max poso: 60 mg/kg/day max poso: 3000 mg/day <u>For pain or febrile state (symptomatic treatment, from 50 kg and no/mild/moderate renal insufficiency):</u> usual dosage: 500-1000 mg/dose, 1-3/day to renew if necessary space the administrations of 4 hours, re-evaluate the treatment periodically poso max: 4000 mg/day space the administrations by 4 hours, re-evaluate the treatment periodically	2 on morning, noon an	paracetamol _____ 1 g
domperidone 10mg cpr	1 in case of nausea	<u>For nausea and vomiting, nausea and vomiting, nausea and vomiting, nausea and vomiting or nausea and vomiting (symptomatic treatment, from 35 kg and mild/no liver failure):</u> usual dose: 10 mg/dose, 1-3/day 1 week(s), for a short duration poso max: 10 mg / dose, 3 / day 1 week (s), for a short period	1 in case of nausea	domperidone _____ 10 mg
escitalopram 10mg cpr	1 on evening	<u>For major depressive episode (no/mild/moderate kidney failure):</u> maintenance dose: 5-10 mg/dose, 1/day ≥ 6 months, for several months poso max: 10 mg / dose, 1 / day		escitalopram _____ 10 mg => 0
spironolactone altizide cpr	1 on morning	<u>For arterial hypertension:</u> maintenance poso: 1/2-1 tablet(to)/take, 1/day	1 on morning	altizide et epargneurs potassiques _____ 15 mg spironolactone _____ 25 mg
pravastatine 20mg cpr	1 on morning	<u>For essential hypercholesterolemia iia or mixed hyperlipidemia iib (no/mild kidney failure):</u> usual poso: 10-40 mg/take, 1/day on evening , ≥ 4 week(s) max poso: 40 mg/take, 1 /day on evening <u>For reduction of mortality and morbidity from cardiovascular causes (primary prevention, or, secondary prevention, renal insufficiency without/mild):</u> usual poso: 40 mg/take, 1 /day on evening <u>For post-transplant hyperlipidemia (no/mild kidney failure):</u> maintenance poso: 20-40 mg/take, 1 /day on evening <u>For essential hypercholesterolemia iia, mixed hyperlipidemia iib, post-transplant hyperlipidemia or reduction of mortality and morbidity from cardiovascular causes (liver failure or moderate/severe renal failure):</u> maintenance poso: on evening	1 on morning	pravastatine _____ 20 mg

Screenshot of the posology tab.

6 STOPP/START rule tab



Patient data

Interview

Interactions

Adverse effects

Posologies

Stopp/Start

Preconizations

Chat

Synthesis

INN

?

Current treatment

escitalopram

Rules triggered

Rule STOPP D4

Deprescribe selective serotonin re-uptake inhibitors (SSRI's) with current or recent significant hyponatraemia i.e. serum Na+ < 130 mmol/l (risk of exacerbating or precipitating hyponatraemia).

Prescribe non-TCA antidepressant drug in the presence of persistent major depressive symptoms.

—

Prescribe selective serotonin reuptake inhibitor (or SNRI or pregabalin if SSRI contraindicated) for persistent severe anxiety that interferes with independent functioning.

Preconized treatment

Ok

Rule START C2

Prescribe

Rule START C5

Prescribe

To prescribe

Rule START E4

Prescribe bone anti-resorptive or anabolic therapy (e.g. bisphosphonate, strontium ranelate, teriparatide, denosumab) in patients with documented osteoporosis, where no pharmacological or clinical status contraindication exists (Bone Mineral Density T-scores > -2.5 in multiple sites) and/or previous history of fragility fracture(s).
Commentaire ABiMed : DENOSUMAB : en 2eme intention, prescription initiale par le rhumatologue. TERIPARATIDE : médicament d'exception, prescription initiale par le rhumatologue. RANELATE DE STRONTIUM (PROTELOS) : N'est plus commercialisé

Rule START I1

Prescribe seasonal trivalent influenza vaccine annually.

Rule START I2

Prescribe pneumococcal vaccine at least once after age 65 according to national guidelines.

Warning, rules are recommendations that should be interpreted according to the patient and the context.
Source for STOPP/START rules:
D O'Mahony, D O'Sullivan, S Byrne, M N O'Connor, C Ryan, and P Gallagher.
[STOPP/START criteria for potentially inappropriate prescribing in older people: version 2.](#)
Age Ageing, 44(2):213–8, 2015.

Screenshot of the STOPP/START rule tab. The user preconized to deprescribe escitalopram, thus we are here in comparative mode. The user clicked on the domperidone-escitalopram interaction, which is displayed on the right.

6

7 Preconization tab

The screenshot shows the ABIMed interface with the 'Preconizations' tab selected. The top navigation bar includes tabs for Patient, Interview, Interactions, Adverse effects, Posologies, Stopp/Start, Preconizations, Chat, Synthesis, and INN. Below the navigation bar, a header reads 'Problems discovered at analysis for test patient (woman, 84 year old)'. A table with three columns (Drug, Problems at analysis, Details) is currently empty. To the right of the table are three buttons: Add, Modify, and Remove.

Preconisations on drug order

Preconized treatment	Posology	Indications	
1 calcium vit D3 500mg/1000ui cpr	1 on morning	Indication ???	Prescribe
2 paracetamol 500mg cpr	2 on morning, noon and evening	Indication ???	Deprescribe
3 domperidone 10mg cpr	1 in case of nausea	Indication ???	Change posology
escitalopram 10mg cpr	1 on evening	Depression	Replace
4 spironolactone altizide cpr	1 on morning	Hypertension	Other
			Restore

Screenshot of the preconization tab.

8 Chat tab

The screenshot shows the ABIMed interface with the 'Chat' tab selected. The top navigation bar includes tabs for Patient data, Interview, Interactions, Adverse effects, Posologies, Stopp/Start, Preconizations, Chat, Synthesis, and INN. Below the navigation bar, a header reads 'This is the GP-pharmacist chat (patient does not have access to this chat), to discuss about CAS CLINIQUE 4 :'. The chat history shows a conversation between a pharmacist and a GP. The pharmacist's messages are in green bubbles, and the GP's messages are in grey bubbles. At the bottom, there is a text input field for a new message and a 'Send' button.

This is the GP-pharmacist chat (patient does not have access to this chat), to discuss about CAS CLINIQUE 4 :

You, 1/6/2023 at 14:33

Hello, I am the patient's pharmacist and I am performing a medication review.

Please, could you give me more details on the patient's depression?

GP, 1/6/2023 at 14:34

Hello!

Of course, it started in 2018 but was exacerbated in 2020...

New message: Send

Screenshot of the chat tab.

9 Synthesis tab

Screenshot of the synthesis tab (on next page).

Dear Doctor,

I received your patient, CAS CLINIQUE 4 84 year old women, for a medication review on September, the 3rd, 2024.

Here is the patient's current treatment:

Current treatment	DCI	Dosage	Indication(s)
1 orocal D3 500mg/1000ui cpr	calcium vit d3	1 in the morning	
2 doliprane 500mg cpr	paracetamol	2 morning, noon and evening	
3 domperidone 10mg cpr	domperidone	1 if nausea	
4 seroplex 10mg cpr	escitalopram	1 in the evening	depressive episodes
5 aldactazine cpr	spironolactone altizide	1 in the morning	essential (primary) hypertension

The patient does not have hepatic insufficiency.

The patient does not have chronic renal insufficiency (clearance unknown).

(click to write here...)

Here are the issues that were identified during the assessment, as well as the [STOPP/START v3](#) rules that were detected (STOPP/START is a good practice guide for elderly patients on multiple medications).

Problem / rule	Details
1 : seroplex 10mg cpr (escitalopram)	
+ STOPP D6 rule	Withdraw a selective serotonin reuptake inhibitor (SSRI) in the presence of current or recent hyponatremia (Na < 130 mmol/l) (risk of exacerbation or recurrence of hyponatremia).
2: (general problems)	
+ START H4 rule	Prescribe a treatment that inhibits bone resorption or bone anabolic (e.g. bisphosphonates, teriparatide, denosumab) in cases of confirmed osteoporosis (bone densitometry: T-score < -2.5) or a history of fragility fracture - in the absence of pharmacological or clinical contraindications, such as a low life expectancy at 1 year. Comment: teriparatide: exceptional drug, initially prescribed by the rheumatologist. denosumab: second-line, initially prescribed by the rheumatologist;
+ START L1 rule	Prescribe an annual seasonal flu vaccination.
+ START L2 rule	Prescribe pneumococcal vaccination at least once, in accordance with national recommendations.
+ START L3 rule	Prescribe vaccination against varicella and shingles, in accordance with national recommendations.
+ START L4 rule	Prescribe vaccination against SARS-CoV2 (Covid-19), in accordance with national recommendations.
Suspected adverse effect	Contractures musculaires Imputation: aldactazine : 0,01 - 0,1%
Suspected adverse effect	Hyponatrémie Imputation: aldactazine : 1 - 10% seroplex : 0,01 - 0,1%

(click to write here...)

Following the assessment, here are some proposals for pharmaceutical interventions to optimize the current treatment:

Proposition	Medicine	Details
+ Deprescribe	seroplex 10mg cpr	

(click to write here...)

The optimized treatment after assessment would therefore be:

Proposed treatment	DCI	Dosage	Indication(s)
1 orocal D3 500mg/1000ui cpr	calcium vit d3	1 in the morning	
2 doliprane 500mg cpr	paracetamol	2 morning, noon and evening	
3 domperidone 10mg cpr	domperidone	1 if nausea	
(retired: seroplex)			
4 aldactazine cpr	spironolactone altizide	1 in the morning	essential (primary) hypertension

I remain at your disposal for more information on this medication review.

Best regards,
Your pharmacist

Generate the summary in PDF

Validate the medication review