Supplementary material

Supplementary Table 1. Common list of potentially inappropriate medications (N=56) for all 16 hospitals included in the study

List of Medications	Concern (risk/effect)	Alternative Treatment / Recommendation	Criteria
GASTROINTESTINAL SYSTEM			
Paraffin	Risk of aspiration and adverse effects.	Evaluate the use of osmotic laxatives.	B, P, CGE
Paraffin in combination			B, P, CGE
HORMONES AND RELATED AGENTS			
Megestrol	Indicated only for anorexia-cachexia in cancer patients. Risk of thrombotic events.	Evaluate thrombotic risk and avoid use in cases of clear cardiovascular risk. Avoid prolonged treatments if there is no adequate clinical response.	B, CGE
AINE			
Indomethacin	Increased gastrointestinal risk and peptic ulcer, especially in patients ≥ 75 years and/or treated with corticosteroids, anticoagulants, or antiplatelets. This risk increases with the duration of treatment. Additionally, indomethacin has a higher risk of central adverse effects than other NSAIDs. Etoricoxib: in addition to gastrointestinal risk, it has cardiovascular contraindications.	If an NSAID is essential, use the minimum effective dose for the shortest duration possible. The choice of NSAID should be based on gastrointestinal, cardiovascular, and renal risk. Whenever possible, the NSAIDs of choice in our environment are ibuprofen (< 1,200 mg/day) and naproxen.	B, P
Diclofenac			B, EU
Diclofenac in combination			
Aceclofenac			CGE, AEMPS
Piroxicam			B, P
Meloxicam			B, EU, P
Ketoprofen			B, P
Dexketoprofen			B, EU
Dexketoprofen with tramadol			
Etoricoxib			EU, P
ANTIBIOTICS			
Nitrofurantoin	Risk of pulmonary, hepatic, and peripheral neuropathy toxicity, especially long-term.	Evaluate safer alternatives based on the antibiogram. Use only for acute cystitis (not as prophylaxis) with a maximum treatment duration of 7 days.	B, P, AEMPS

List of Medications	Concern (risk/effect)	Alternative Treatment / Recommendation	Criteria
HYPOGLYCEMICS			
Glibenclamide	Prolonged half-life sulfonylureas can cause severe prolonged hypoglycaemia.	Gliclazide or glipizide are recommended as the sulfonylureas of choice.	B, SS, EU
Glimepiride			B, SS, EU
Glimepiride in combination			B, SS, EU
CENTRAL ANTIADRENERGICS			
Methyldopa	High risk of central adverse effects. Not recommended as first-line treatment or in combination.	Evaluate the use of a preferred antihypertensive based on the patient's comorbidities.	SS, P
Clonidine			B, SS
Moxonidine			SS, CGE
ALPHA-ADRENERGIC RECEPTOR ANTAGONISTS			
Prazosin	Risk of orthostatic hypotension, especially in very elderly patients.	Evaluate the use of a preferred antihypertensive based on the patient's comorbidities. For benign prostatic hyperplasia, consider tamsulosin.	B, P
Terazosin			B, P
Doxazosin			B, EU, P
OTHER HYPOTENSIVES			
Nifedipine	Increased risk of hypotension, acute myocardial infarction, and mortality.	Evaluate other alternatives according to the indication.	EU, SS, P
ANTIDEPRESSANTS, SELECTIVE SEROTONIN REUPTAKE INHIBITORS			
Paroxetine	Increased risk of seizures, falls, fractures, and all-cause mortality. Anticholinergic effects.	Consider first-line SSRIs in geriatrics: citalopram (maximum dose 20 mg/day) and sertraline.	B, EU, P
Fluoxetine	Risk of central adverse effects (nausea, insomnia, dizziness, and confusion).		EU, P
ANTIDEPRESSANTS, NON-SELECTIVE MONOAMINE REUPTAKE INHIBITORS			
Imipramine	Anticholinergic adverse effects, sedation, orthostatic hypotension, and risk of falls.	Use first-line antidepressants for major depression (SSRIs of choice in geriatrics, SNRIs) and use tricyclic antidepressants only when other alternatives have been exhausted.	B, P
Clomipramine			B, P
Nortriptyline			B, EU
Doxepin			B, P

List of Medications	Concern (risk/effect)	Alternative Treatment / Recommendation	Criteria
OPIOIDS			
Pethidine (meperidine)	Higher risk of neurotoxicity, including delirium, than other opioids.	Evaluate the indication of pethidine. If a strong opioid is essential, the alternative of choice is morphine.	B, P, CGE
BENZODIAZEPINES			
Clonazepam	Risk of falls and fractures, decreased reflexes, psychiatric reactions, cognitive impairment, and depression.	When the use of benzodiazepines is essential, use at low doses preferably lorazepam and lormetazepam. Use the minimum effective dose for the shortest possible duration. Increase and withdraw the dose gradually.	B, SS
Chlordiazepoxide			B, SS, P
Clorazepate			B, SS, P
Clobazam			SS, P
Diazepam			B, EU, SS, P
Diazepam in combination			
Flurazepam			B, SS, P
Ketazolam			SS, CGE
Bromazepam			EU, SS, P
Alprazolam			B, EU, SS, P
Loprazolam			SS, CGE
Triazolam			B, SS, P
Midazolam			SS, CGE
Brotizolam			SS, P
Medazepam with amitriptyline			SS, P
NON-BENZODIAZEPINE HYPNOTICS			
Zopiclone	Risk of falls and fractures, decreased reflexes, psychiatric reactions, and cognitive impairment. Zolpidem: the recommended dose is 5 mg/day.	Use the minimum effective dose for the shortest possible duration. Increase and withdraw the dose gradually.	B, EU, SS, P, AEMPS
Zolpidem			

List of Medications	Concern (risk/effect)	Alternative Treatment / Recommendation	Criteria
ANTITHROMBOTICS			
Ticlopidine	There are more effective and safer pharmacological alternatives.	For dual antiplatelet therapy, consider the use of aspirin in combination with clopidogrel or ticagrelor.	SS, P
Dipyridamole	Risk of orthostatic hypotension.		B, EU
Prasugrel	Higher exposure to the active metabolite of prasugrel. Not recommended for ≥ 75 years.		FT, P
OTHER DRUGS			
Pentoxifylline	Lack of demonstrated efficacy. Risk of falls and orthostatic hypotension, the latter risk is increased with most vasodilators.	--	EU, P
Diacerein	Not recommended in patients ≥ 65 years due to risk of hepatotoxicity and diarrhea.	--	AEMPS, CGE
Phenobarbital	High risk of dependence, tolerance as a sedative, and overdose.	Consider other antiepileptics or sedatives based on the indication.	B, P
Piracetam	Lack of demonstrated efficacy.	--	EU, P
Agomelatine	Efficacy not demonstrated in patients ≥ 75 years and risk of hepatic toxicity.	Consider first-line SSRIs in geriatrics: citalopram (maximum dose 20 mg/day) and sertraline.	AEMPS, CGE
Medications included in: 1. 2 bibliographic databases (Beers 2019 [B], STOPP-START 2015 [SS], EU-PIM 2015, [EU], PRISCUS 2010 [P]); 2. Explicit recommendation of the technical sheet [FT]; 3. AEMPS alert [AEMPS]; 4. Expert group consensus [CGE]			

Table adapted from the reference 40 of the article