



# ANALYSIS OF POTENTIALLY INAPPROPRIATE MEDICATIONS IN CHRONIC COMPLEX PATIENTS AND IN PATIENTS WITH ADVANCED CHRONIC DISEASE IN THE EMERGENCY DEPARTMENT

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## Background and Importance

The aging of population implies a growing prevalence of chronic diseases and polypharmacy as well in drug-related problems (DRP). Elderly patients have complex care needs that are difficult to be carried out in Emergency Department (ED) which may entail an increase in Potentially Inappropriate Medications (PIM).

## Aim and Objectives

**Primary objective:** To detect PIM on Chronic Complex Patients (CCP) and patients with Advanced Chronic Disease (ACD) after a stay in ED.  
**Secondary objectives:** To analyse the reason for admission in ED, the degree of polimedication, the main groups of drugs involved. To compare the PIM at discharge with PIM detected at the entrance. To analyse the prevalence of PIM in CCP and ACD, according to sex and age.

## Materials and Methods

Retrospective observational study conducted in November 2018 in an ED of a second level hospital. **Variables recorded:** demographic data, cause of admission, CCP/ACD, treatment before/after stay at ED. **Used tools:** STOPP-START criteria, the criteria of Chronicity Prevention and Care Programme (PPAC) of the Department of Health of Catalonia.

## Results

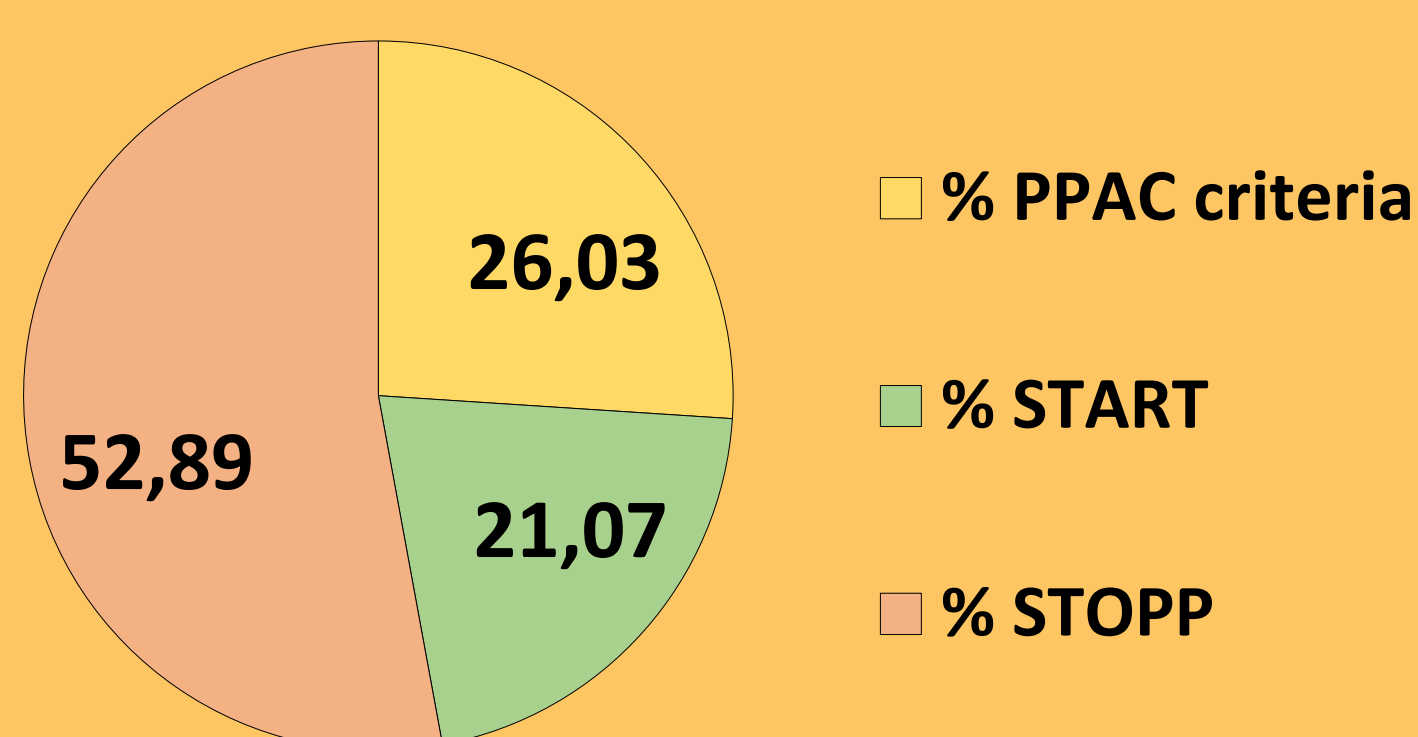
100 patients (50.9% men) were included. Mean age: 80.6 ± 11.3 years. 84.7% CCP and 15.3% ACD. Main reasons of admission in ED: acute bronchitis, low back pain. The average number of drugs prescribed per patient was 9.6 (3-18).

In this study 242 PIM were detected in 90 patients (83.9% in CCP; 16.1% in ACD), an average of 2.7±1.4 per patient.

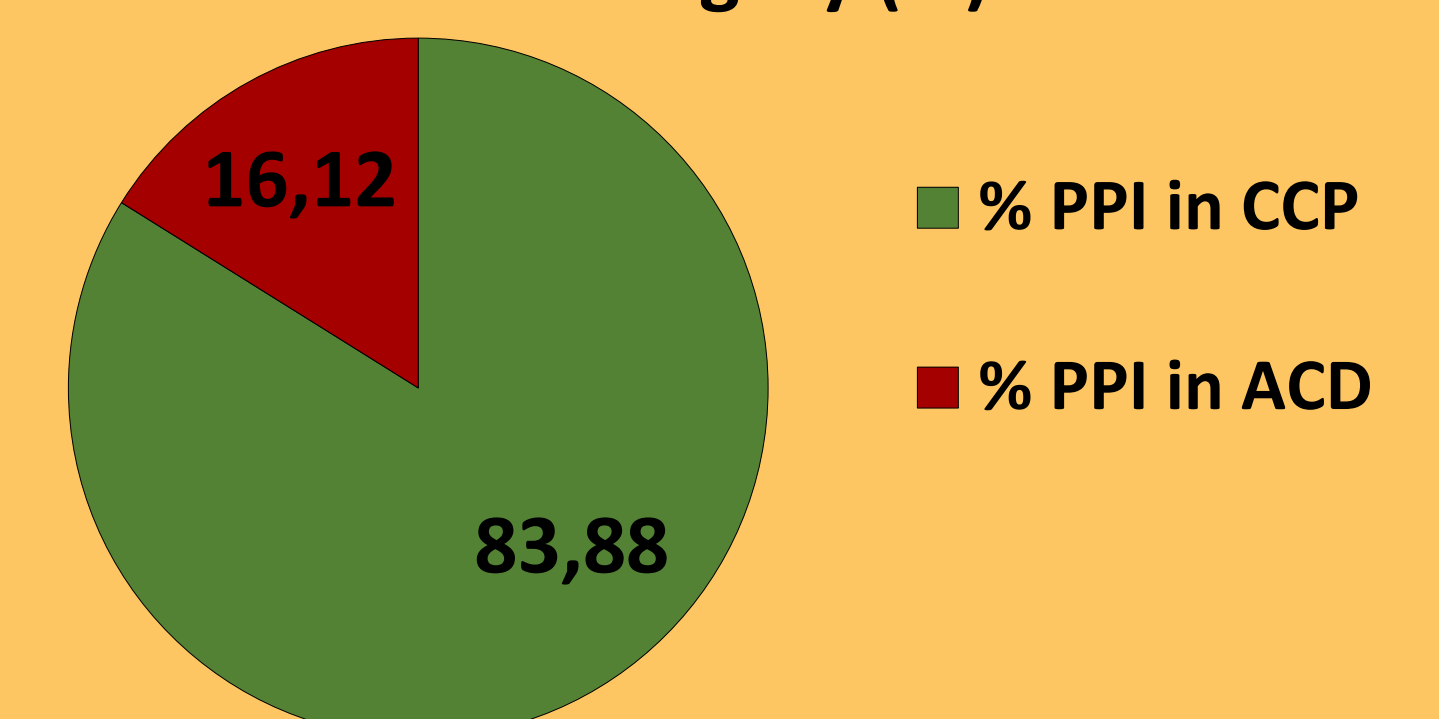
Three quarters of PIM were because of chronic treatment. 63 PIM were detected with PPAC criteria; 51 were START criteria and 128 STOPP.

The PIM of 14 patients may be related to the cause of admission in ED, in particular due to falls and fractures. All of them had drug-related falls prescribed in their chronic treatment.

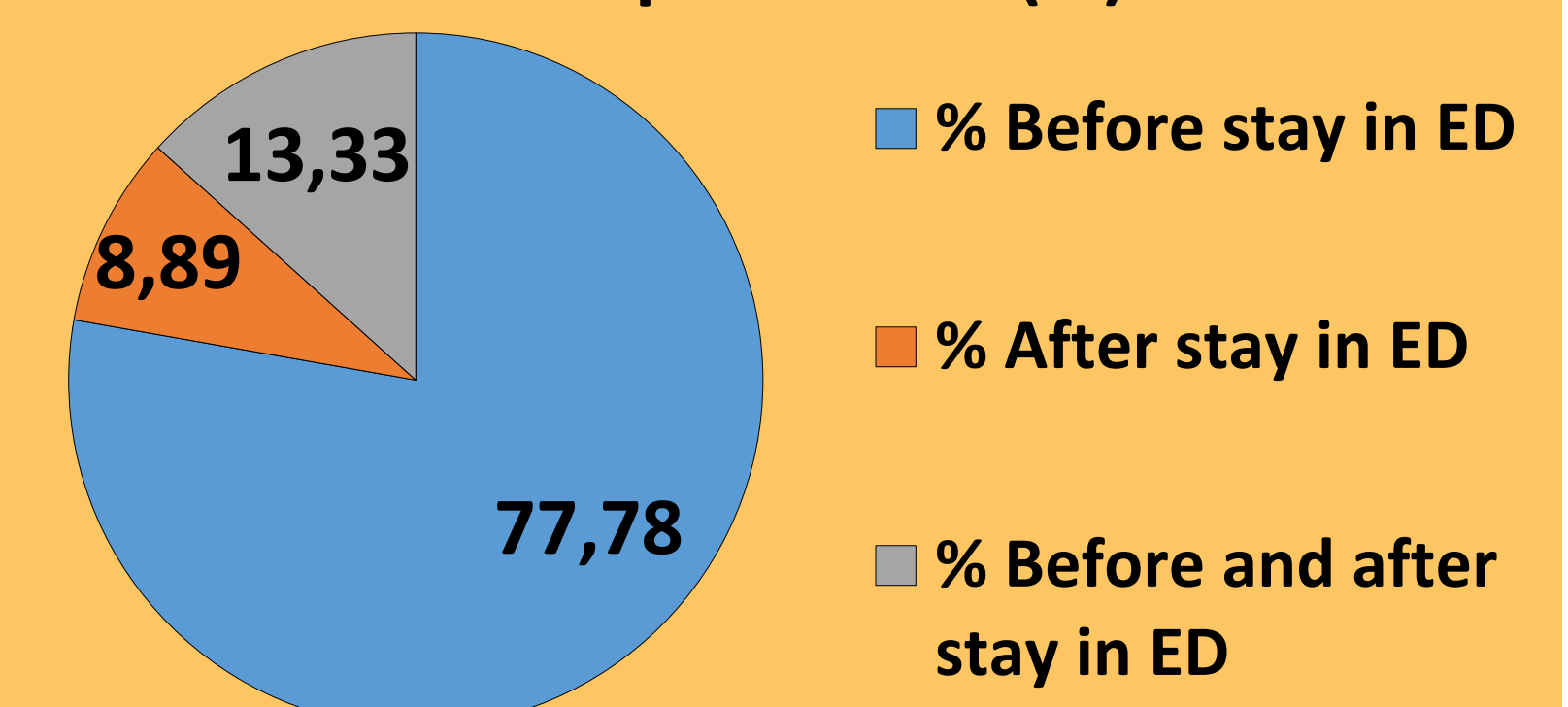
Percentage of detected PIM (%)



Percentage of PIM found by patient category (%)



Percentage of PIM detected in patients that pass for ED (%)



### Most prevalent PPAC criteria

PPAC criteria	%
01. Patients ≥75 years old with PIM	0,14%
02. Patients ≥75 years old with 3 or more drugs with anticholinergics effects	5,51%
03. Patients with avoidable medication	2,03%
04. Patients with 2 or more benzodiazepines or related drugs	7,60%
06. Patients with COX-2 NSAIDs, diclofenac or aceclofenac and drugs indicating cardiovascular pathology.	12,72%
07. Patients with RAS blockers + NSAIDs + diuretic	2,60%
08. Patients with dementia treatment and receiving antipsychotics simultaneously for ≥6 months.	3,41%
09: Benzodiazepines and other hypnotics for ≥6 months	64,67%
13. Patients carrying urinary absorbents treated with urinary antispasmodics.	1,31%

### Most prevalent STOPP criteria

STOPP criteria	Percentage	SG: Respiratory system	Percentage
SA: Indication of the medication	6,68%	SG 3	2,22%
SA 3	6,39%	SH: Musculoskeletal system	4,38%
SB: Cardiovascular system	10,00%	SH 2	1,19%
SB 11	2,11%	SH 7	3,20%
SB 7	3,29%	SI: Urogenital system	1,63%
SB 8	2,63%	SI 1	1,63%
SB 4	1,37%	SJ: Endocrine system	0,27%
SC: Antiaggregants/anticoagulants	7,46%	SK: Drugs that increase the risk of falling in the elderly	11,49%
SC 1	2,99%	SK 1	7,46%
SC 10	1,32%	SK 2	4,03%
SC 3	1,84%	SL: Analgesics	3,20%
SC 5	1,31%	SL 2	2,15%
SD: Central nervous system	36,48%	SL 3	1,05%
SD 5	29,90%	SN: Antimuscarinic/anticholinergic	14,73%
SE: Renal system	0,93%	SN 1	14,73%
SF: Gastrointestinal system	0,25%		

### Most prevalent START criteria

START criteria	Percentage
SA: Cardiovascular system	37,56%
SA 2	1,33%
SA 6	32,77%
SA 7	3,46%
SB: Respiratory system	0,64%
SB 1	0,64%
SD: Gastrointestinal system	4,91%
SD 2	4,91%
SE: Musculoskeletal system	31,67%
SE 2	20,58%
SE 3	5,05%
SE 5	6,04%
SH: Analgesics	25,21%
SH 1	0,18%
SH 2	25,03%

## Conclusion and Relevance

The study population had a very advanced age with a high degree of polypharmacy and a high prevalence of PIM. The most frequent drugs involved were Nervous System drugs, specially the benzodiazepines. The pharmacist's contribution to review chronic treatment and to detect PIM can improve safety of the patients in the ED.