

Hospital Admissions Related To Inappropriate Prescribing According To STOPP And START Criteria In Frail Older Persons

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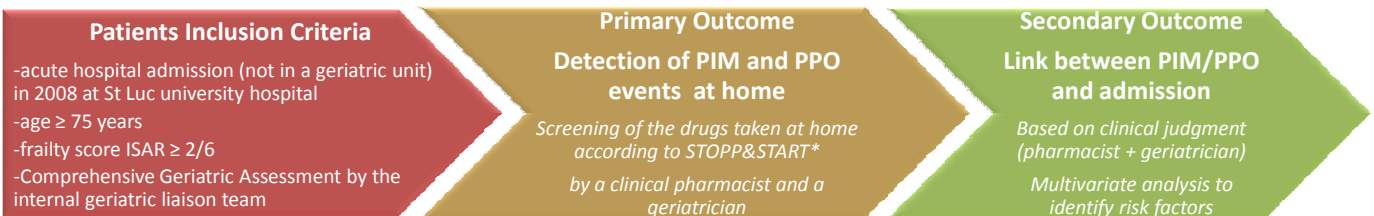
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Objective.

To detect potentially inappropriate medications (PIM) and potentially inappropriate prescribing omissions (PPO) at home according to STOPP and START* and related acute hospital admission in frail older people.

Methods

Cross-sectional study



Results

302 frail older people included
Age 84 years ± 5; ♀ 63 %
Home 83 % (alone 43 %) vs. nursing home 17 %
ISAR score : average 3,5 ± 1
6 ± 3 drugs/day
Patients taking ≥ 5 drugs/day : 75 %

2.028 drugs screened for STOPP
302 patients screened for START

5 most frequent PIM	Prevalence % (/302patients)
Benzodiazepines	24
Aspirin	12
Opiates	8
β-blockers	6
Tricyclic antidepressants	5
5 most frequent PPO	
Aspirin	21
Statins	19
Calcium and vitamin D	17
Vitamin K antagonists	11
Bisphosphonates	10

Potentially inappropriate medications (PIM) according to STOPP

Detection of **210 PIM** events
out of 2.028 medications at home (~1 drug/ 10)
Prevalence **48 %** (144/302) (~1 patient/ 2)

Link between PIM and admission

Hospital admission was related to PIM in **54 patients** (18%):

- 46 falls with fracture
⇒ **drugs affecting fallers (benzodiazepines, ...)**
- 2 bleedings
⇒ **aspirin, NSAIDs**
- 2 heart failure
⇒ **NSAIDs**
- 4 others

Predictors of PIM-related admission

Multivariate analyses :
History of **recent falls** (p<0.001)

Potentially inappropriate prescribing omissions (PPO) according to START

Detection of **362 PPO** events
Prevalence **63 %** (189/302) (~2 patients/ 3)

Link between PPO and admission

- Hospital admission was related to PPO in **38 patients** (13%):
19 falls with fracture (while not receiving prevention)
⇒ **calcium, vitamin D, bisphosphonates**
- 16 cardiovascular problems (ischemic heart disease, heart failure...)
⇒ **aspirin, statins, ACEI**
- 3 others

Predictors of PPO-related admission

Multivariate analyses
Previous **osteoporotic fracture** (p<0.001)
Atrial fibrillation (p=0.004)

Conclusions. Using STOPP and START, inappropriate prescriptions (both PIM and PPO) were found to be frequent and associated with a substantial number of acute hospital admissions in frail older persons. **Fall-induced osteoporotic fracture** was the most important cause for hospital admission related to inappropriate prescribing and should be a **priority for pharmacological optimisation approaches.**

* P. Gallagher, C. Ryan, S. Byrne, J. Kennedy and D. O'Mahony. STOPP (Screening Tool of Older Person's Prescriptions) and START (Screening Tool to Alert doctors to Right Treatment). Consensus validation. International Journal of Clinical Pharmacology and Therapeutics, Vol. 46 – No. 2/2008 (72-83)

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