Physician acceptance and clinical importance of interventions made by aclinical pharmacist for older inpatients
A. Spinewine1, C. Swine2, P.M. Tulkens1, S. Dhillon3, J.D. Hecq4, L. Mallet5

1School of Pharmacy, Université catholique de Louvain, Belgium; 2Department of Geriatric Medicine, Mont-Godinne Teaching Hospital, Belgium; 3School of Pharmacy, University of Hertfordshire, United Kingdom; 4Pharmacy Department, Mont-Godinne Teaching Hospital, Belgium; 5Université de Montreuil and McGill University Health Center, Canada.

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ABSTRACT

Objective: To describe the type of interventions made by a clinical pharmacist for frail elderly inpatients, their acceptance by physicians, and their clinical importance.

Methods: The study was part of a randomised controlled trial assessing the impact of a clinical pharmacist on prescriptions prescribing for patients admitted on an inpatient geriatrics unit. All interventions made by the clinical pharmacist during the study period were reported by type of patient eliciting the intervention, type of intervention, and acceptance of intervention. The contributions were clinically validated by a panel which comprised two geriatricians, two clinical pharmacists (two major, one objective, one subject), and a statistician (one major, one objective, one subject). When individual ratings differed, the panel discussed to reach a consensus for each intervention.

Results: The pharmacist made 1179 interventions for 101 patients (mean age 82.2 ± 6.9 years; mean number of regularly prescribed drugs per patient: 7.8 ± 3.5; n = 700; 73% female; 72% community-dwelling). The most frequent types of interventions were to discontinue a drug (22.2%), to educate the physician without direct medical change (16.8%), to add a new drug (10.5%), or change dosage (12.3%) to switch to another drug (9.6%). Intervention acceptation was fully accepted in 907 (76.9%) initiated by the pharmacist, partially accepted in 104 (8.8%) and rejected in 88 (7.3%). Characteristics of patients and interventions are reported in the Table.

Conclusions: The majority of interventions made by a clinical pharmacist to optimize prescriptions for older patients were accepted and were deemed clinically relevant.

INTRODUCTION

• Inappropriate medicines use in older patients is frequent and can lead to adverse outcomes. Geriatric evaluation and management (GEM) programs and collaboration with clinical pharmacists can improve the quality of drug use in older patients [1,2].

• Few studies evaluating drug-related outcomes have been performed with acutely ill elderly patients. Most were conducted in North America [3,4]. Their application to geriatric practice in Europe is not well established.

AIM OF THE STUDY

• To describe the characteristics of interventions made by a clinical pharmacist for patients hospitalized on a GEM unit.

• To measure their acceptance by clinicians and their clinical significance.

METHODS

• Design: Intervention study (part of a randomized controlled trial).

• Setting: Acute GEM unit, Mont-Godinne Teaching Hospital (Belgium).

• Intervention: Pharmaceutical care provided by a clinical pharmacist present on the unit 4 days a week (November 2003 and May 2004):
  - Medication history on admission
  - Analysis of prescribing appropriateness - intervention if problem identified
  - Discharge counseling
  - Answer to questions on medicines asked by other professionals

• Outcome measures:
  - Characteristics of interventions to improve prescribing, and acceptance
  - Clinical significance of interventions with potential clinical impact, initiated by the clinical pharmacist and subsequently accepted (n=700);
  - Expert panel used a validated scale [5] and reached consensus

• Analysis: Descriptive analysis using SPSS 11.0.

• Study protocol approved by the local Ethics Committee; informed written consent obtained from each patient/caregiver.

RESULTS

Characteristics of patients

- n = 101; 73% female; 72% community-dwelling
- Age (years): 82.2 ± 6.9
- Number of regularly prescribed drugs per patient: 7.8 ± 3.5
- Length of stay (days): 19.7 ± 12.1

Characteristics of interventions made by the clinical pharmacist (n=1179)

- DRPs underlying interventions
  - Underuse: 169 (14.3)
  - No specific problem: 140 (11.9)
  - Wrong dose: 132 (11.2)
  - Inappropriate choice of medicine: 109 (9.2)
  - Inappropriate duration of therapy: 104 (8.8)
  - Inappropriate modalities of administration: 70 (5.9)
  - ADH (atypical) or confirmed: 68 (5.8)
  - Error in medication history: 56 (4.7)
  - Inappropriate follow-up: 45 (3.8)
  - Prescription-writing error: 37 (3.1)
  - Drug-dose interaction: 39 (3.3)
  - Duplication: 34 (2.9)
  - Less costly alternative: 34 (2.9)
  - Drug-drug interaction: 31 (2.6)
  - Modalities of administration not practical for patient: 28 (2.4)
  - Other: 14 (1.2)

- Drugs most often involved
  - Calcium/vitamin D, antihypertensive, antiarhythmics: 55 (4.7)
  - Psychostimulants, psychotropics, ACEI and ARA, lipid-lowering drugs: 41 (3.5)
  - Antibiotics, psychostimulants, psychotropics, ACEI and ARA: 37 (3.2)
  - Psychotropics, psychostimulants, ACEI and ARA: 34 (2.9)
  - Psychostimulants, anti-asthmatics, antibiotics: 34 (2.9)
  - Beta-blockers, ACEI and ARA, bisphosphonates, psychoanaleptics: 34 (2.9)
  - Antihypertensive, angiotensin-receptor antagonist: 28 (2.4)
  - Miscellaneous: 14 (1.2)


drugs involved

Characteristics of interventions made by the clinical pharmacist (n=1179), continued

- Most common types of interventions
  - Discontinue medicine: 262 (22.2)
  - Education/form healthcare professional: 214 (18.2)
  - Add a new drug: 198 (16.8)
  - Change dose: 147 (12.5)
  - Switch to other drug: 95 (8.1)

- Most interventions accepted
  - Psychostimulants (N05) *: 108 (9.0)
  - Antihypertensives (B01): 103 (8.7)
  - Psychopharmacologicals (N06): 92 (7.8)
  - Anaesthetics (N02): 78 (6.6)
  - Drugs for obstructive airway diseases (R03): 45 (3.8)

- Most drugs commonly involved (ATC 2 level) (%)
  - Psychostimulants include antidepressants and drugs for dementia
  - Psychostimulants include antipsychotics, anxiolytics, hypnotics and sedatives

CONCLUSIONS

- One of the first European studies to report involvement of a clinical pharmacist in the care of acutely ill frail elderly patients.

- Successful collaboration overall.

- Interventions relating to a wide variety of drug-related problems and drugs.

- Most interventions accepted.

- Five ‘moderate’ and two ‘major’ interventions per patient, on average.

REFERENCES