Influence of a medication history and a pharmaceutical opinion at admission of geriatric hospitalized patients on inappropriate drug prescribing

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1.Introduction

Adverse drug events are very common in elderly and are a public health concern. In 1991, Beers et al. published explicit criteria for determining inappropriate medication use by the elderly. The criteria, updated in 1997 and 2003, cover drugs that should be avoided because they are either ineffective or pose unnecessarily high risk for older persons while a safer alternative is available. These criteria, as other expert consensus, may be used as a guide for prescribing but their application in everyday practice is limited.

2.Objectifs

Evaluate the influence of a medication history and a pharmaceutical opinion underlining potentially inappropriate prescriptions performed by a pharmacist at the admission of geriatric patients in a teaching hospital on inappropriate drug prescribing at discharge.

3.Methods

Prospective study (2009 = intervention) with historical control (2008) analyzing the potentially inappropriate medications at admission and discharge.

50 patients were included in each group. Characteristics of the 2 groups are listed in table 1. Inclusion criteria were :

- Admission between October and December
- Coming from the home
- Consuming at least 3 drugs on arrival at hospital

On the intervention group, a comprehensive medication history was performed and the following drug related problems were pointed out :

- potentially inappropriate medications, according to a pre-established list, based on the lists of Beers[1] and Laroche[2].
- contraindicated medications or to adjust in case of renal insufficiency
- significant drug interactions
- medications recently started or changed

4.Results

Between admission and discharge, the number of potentially inappropriate medications significantly decreases. The reduction is significant in both groups, but greater in the intervention group (2008: p = 0,044; 2009: p <0,0001) (fig 1). At discharge, 18% of patients take at least 2 potentially inappropriate medications in the control group, against 2% in the intervention group (fig 2).

The median length of stay is also reduced between 2008 and 2009 (18,6 vs. 14,4 days, p = 0,008).

	Group A (2008)	Group B (2009)	P-value
Number of patients	50	50	1,00
Distribution men/women	18/32	16/34	0,67
Mean Age (years)	82,86	82,90	0,97
Length of stay (days)	17,5	1,44	0,008
Average number of drugs at admission	7,68	8,38	0,26
Average number of drugs at discharge	8,2	7,66	0,33

Table 1
Characteristics of patients

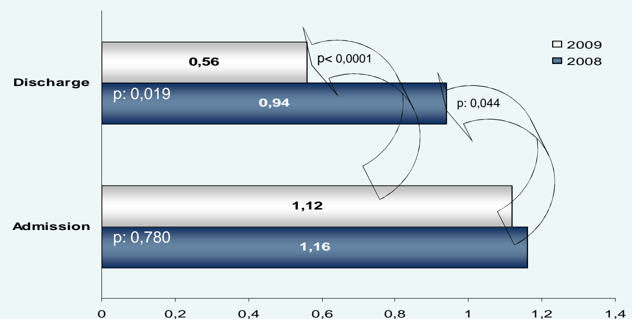

Figure 1
Average number of potentially inappropriate medications

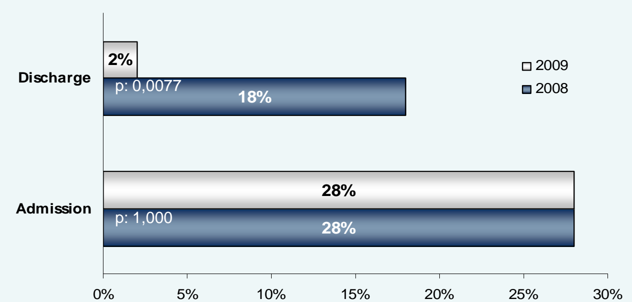

Figure 2
% of patients with ≥ 2 potentially inappropriate medications

5.Conclusion

Some confounding variables may influence these results: change of medical team, severity of illness, ... These parameters will be analyzed more in details in further work. Nevertheless, these results demonstrate the added value of a medication history and a pharmaceutical opinion at admission on the quality of drug prescription at discharge after geriatric hospitalization.

In a multidisciplinary approach, the integration of the expertise of a pharmacist in the health care team improves the pharmacotherapeutic management of the frail elderly patients.

Bibliographic references:

[1] Fick DM et al.— Updating the Beers Criteria for Potentially Inappropriate Medication Use in Older Adults: Results of a US Consensus Panel of Experts. Arch Int Med, 2003, 22, 2716-1724.

[2] Laroche ML et al.— Médicaments potentiellement inappropriés aux personnes âgées : intérêt d'une liste adaptée à la pratique médicale française. Rev méd int, 2009, 7, 592-601.

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