

POLYPHARMACY RELATED WITH INCREASED RISK OF HIP FRACTURE IN THE ELDERLY PATIENTS

García O; Jiménez R; Velasco J;
Arocas V; De la Rubia M.A;

University Hospital Virgen de la Arrixaca, Murcia, Spain

Objective

- ❑ Polypharmacy and the use of a particular group of drugs including benzodiazepines, neuroleptics, antidepressants, antihypertensives, diuretics, acetylcholinesterase inhibitors and proton pump inhibitors have been associated with the risk of falls and subsequent Hip Fracture (HF).
The aim of this study is to describe :
 1. Assess the association between polypharmacy and the use of drugs related to falls.
 2. Analyze the mortality in elderly patients with HF.

Methods

- ❑ Retrospective case-control study.
- ❑ The case group consists of patients aged ≥ 75 years admitted to a tertiary hospital with HF after accidental fall during the year 2010 and the same number of patients without HF were randomized of Internal Medicine Service as the control group.
- ❑ Variables were: age, sex, pharmacology history and mortality within a year.
- ❑ To compare comorbidity between both groups Charlson index was used.
- ❑ SPSS® was used to estimate update Bayesian odds ratio (OR) and 95% credible intervals (CI).

Results

- ❑ 61 patients were admitted with HF. The relationship in the control group was 1:1.
- ❑ Mean age was 83.3 ± 4.8 years (60.7% women) for the HF cases versus 81.97 ± 4.04 control group, $p=0.12$.
- ❑ Mean number of drugs consumed was 7.2 ± 3.3 in HF cases versus 4.9 ± 2.1 control group, $p < 0.05$ (table 1).
- ❑ The use of benzodiazepines (OR 3.87, CI 1.77-8.46); antidepressants (OR 3.26, CI 1.18-9.02) and diuretics (OR 2.58, CI 1.24-5.39) demonstrated a significant association with HF ($p < 0.05$).
- ❑ The 34.4% of patients with HF died before one year, compared to 9.8% in the control group ($p < 0.05$, OR 5.7 95% CI 2.1-15).
- ❑ Mean Charlson index was 4.16 for HF and 3.62 for control group ($p=0.14$).

NUMBER OF DRUGS	HIP FRACTURE		p	OR (IC 95%)
	YES	NO		
	(n=61) No (%)	(n=61) No (%)		
1-2	8 (13.1%)	9 (14.7)	0.79	0.82 (0.31-2.43)
3-4	7 (11.5%)	15 (24.5%)	0.059	0.39 (0.14-1.05)
5-6	10 (16.5%)	25 (40.9%)	0.002	0.28 (0.12-0.65)
7-8	13 (21.3%)	6 (9.8%)	0.08	2.48 (0.87-7.03)
9-10	15 (24.6%)	5 (8.1%)	0.014	3.65 (1.23-10.8)
≥ 11	8 (13%)	1 (1.6%)	0.03	9 (1.09-74.8)

Table 1: Number of medications of Hip fracture Cases & control patients.

Conclusions

- ❑ The risk of HF in the elderly increases with the number of medications taken and the use of benzodiazepines, antidepressants and diuretics.
- ❑ The mortality in the elderly with HF is three times higher than control group, which is consistent with published studies. These studies show mortality rate among 7-33% after the first year of suffering HF.

References

1. González-Montalvo JI et al. Why do hip fracture patients die?. Med Clin (Barc). 2011;137(8):355-360
2. Woolcott J et al. Meta-analysis of the Impact of 9 Medication Classes on Falls in Elderly. Arch Intern Med 2009.;169(21):1952-1960.