

Drug-drug interactions in elderly patients: a 1-year prospective survey in an emergency department

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Introduction: Drug-drug interactions represent a major concern for elderly people receiving polypharmacy. Although several combinations of drugs are expected to interact, the incidence of those causing an overt pool of adverse symptoms remains unknown. **Aim:** To identify potential drug-drug interactions (PIs) in elderly patients admitted to an emergency department (ED) and to evaluate the prevalence of these admissions consistent with an expected drug interaction. **Methods:** This study analyzed data collected in the setting of a program of pharmacologic support for elderly patients in an ED, where a pharmacologist and a geriatrist cooperate with ED physicians in the identification of drug-related admissions (including drug-drug interactions). This prospective survey included consecutive patients, ≥ 65 years-old admitted at the ED of Pisa University Hospital from May 1st, 2012 to May 1st, 2013 (Monday-Friday, 10AM-5PM). Each patient or his/her relatives/tutor was interviewed to collect demographic and therapeutic data. PIs were assessed using Thomson Micromedex®. (<http://www.micromedexsolutions.com/home/dispatch>), and classified on the basis of clinical relevance (contraindicated, major, moderate, minor). Each ED admission (discharge diagnosis) was evaluated for its consistency with the expected signs and symptoms of PI reported by Micromedex®. **Results:** Throughout the study period, 1209 ED admissions (1157 patients, 691 female, mean age: 80.2 ± 7.9) were recorded. An overall number of 7235 drugs were evaluated with 2406 PIs. 125 PIs (5.2% of all PIs) were considered as consistent with ED admission. PIs were classified on the basis of clinical relevance as follow: contraindicated: 17 (4 consistent with ED admission, 23.0%); major: 672 (37, 5.5%); moderate: 1627 (84, 5.2%); minor: 86 (4, 4.6%). The most frequently recorded PIs were: acetylsalicylic acid + furosemide: 118 (reduction of furosemide diuretic effect); acetylsalicylic acid + ramipril: 78 (reduction of ramipril antihypertensive effect); furosemide + ramipril: 74 (postural hypotension with the first ramipril dose). Among 'major' PIs the most frequently recorded were: acetylsalicylic acid + clopidogrel: 23 (bleeding); acetylsalicylic acid + paroxetine: 20 (bleeding); acetylsalicylic acid + sertraline: 15 (bleeding). When considering PIs consistent with ED admission, the most frequently reported were levotiroxine + warfarin: 3 (bleeding); allopurinol + warfarin: 3 (bleeding); lansoprazole + warfarin: 3 (bleeding); and paroxetine + trimipramine: 3 (anticholinergic effects). **Conclusions:** Treatments of elderly patients, as recorded in our ED, are associated with a high number of PIs, but only a small proportion of them is consistent with the cause of admission. Bleeding involving anticoagulants or antiplatelets appears to represent the most relevant issue.