

ABSTRACT

Institution/department: Charles University, Faculty of Pharmacy in Hradec Kralove, Department of Social and Clinical Pharmacy

Title of diploma thesis: Evaluation of the rationality of prescribing of selected potentially inappropriate medications in ambulatory geriatric patients

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Introduction: Rational therapy in the geriatric population is an essential area due to the ever-increasing percentage of geriatric patients in the population. Due to the frequent polypharmacotherapy in these patients, including possible polypragmatism, it is important to constantly monitor potential drug problems and address potential drug risks in a timely manner. As an auxiliary tool in rational geriatric pharmacotherapy, expert groups have defined many potentially inappropriate medications (PIMs), which often contribute to drug reactions in the elderly, and which should be given more attention in clinical practice. This diploma thesis focused on 10 selected, most frequently used PIMs in the geriatric outpatient clinic of the University Hospital in Hradec Králové, and its aim was to monitor how often these drugs are prescribed in high-risk situations in geriatric patients (i.e., in the presence of symptoms, laboratory results and diseases, which are among the relative or even absolute contraindications, potential side effects or potential drug interactions).

Methodology: Data collection was performed by prospective, comprehensive, geriatric examination of patients in the geriatric outpatient clinic in the period from 4 February 2020 to 16 April 2021. During this time, 100 patients aged 75-98 years were examined in the outpatient clinic. The examination also included the determination of all laboratory and clinical results, which were used to determine the basic drug problems. The INOMED study was approved by the Ethics Committee of the Faculty of Pharmacy, Charles University in Hradec Králové, and data were obtained and recorded anonymously after the patient's informed consent was signed. The aim of the analysis was to identify the 10 most frequently prescribed PIMs in the total group of patients, from lists of PIMs compiled from all currently available explicit criteria by the research group "Aging, polypharmacotherapy and changes in the therapeutic value of drugs in old age". For these 10 drugs, we focused on 3 main risk areas – 1 / use of PIMs in patients with symptoms that may potentially be classified as risky symptoms with PIMs or may be classified as potential side effects of the PIMs, 2 / use of PIMs under conditions that are listed as

contraindications (absolute / relative) for the use of PIMs and 3 / the use of PIMs in drug regimens in which potentially hazardous drug combinations with these drugs are found.

Results: The study included 100 geriatric patients (67% females and 33% males) from outpatient care with a mean age from 83.8 years (standard deviation (SD) \pm 4.53), with a median of 84 years. Out of these, 83 patients (83%) were taking at least one potentially inappropriate drug. The 10 most often prescribed PIMs in the cohort included: acetylsalicylic acid (35%), pantoprazole (25%), omeprazole (17%), dabigatran (15%), amiodarone (11%), apixaban (10%), digoxin (9%), spironolactone (8%), rivaroxaban (6%) and solifenacin (5%). At least 1 PIM was prescribed in 83% of patients. The highest number of potentially inappropriate situations in which PIMs were administered and could also be potential side effects were observed with pantoprazole (17% of patients suffered from 1 or more such potential risks). Most drug-drug interactions were documented in ASA (19% of patients with at least 1 potential drug interaction), as well as the most relative contraindications (15% of patients) and in PPIs (10%). The highest number of absolute contraindications were reported with amiodarone (6%), of which (5%) had thyroid problems, and solifenacin (4%).

Conclusion: Out of total 100 patients examined in the geriatric outpatient clinic of the University Hospital Hradec Králové, participating in the INOMED project, 83 % used PIMs and the highest percentage of patients were treated with PIMs from the PPI group or a low-dose acetylsalicylic acid regimen. It has been shown that in our outpatient settings, the use of PIMs is very common, as well as the total number of potential risk situations in which they are administered. The most common potentially hazardous situations that have been identified are thyroid disorders in amiodarone, osteoporosis in PPIs, and concomitant use of ASA with diuretics or digoxin with β -blockers. The aim of this work was a descriptive student analysis. All reported risks are therefore analysed with potential significance, except for absolute contraindications, in the detection of which drugs should not be further administered. This is a pilot analysis thus the aim was not to carry out association analyses.

Key words: potentially inappropriate medications, rational geriatric pharmacotherapy, drug risks, geriatrics

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