

ABSTRACT

Introduction: Population is demographically aging and proportion of older adults in the society increases. Also the number of sick persons raises, and the high consumption of drugs and polypharmacotherapy in old age are global problems. The definition of polypharmacotherapy is not uniform. Most commonly it is defined as the use of 5 or more drugs simultaneously. In the scientific literature we also see the term "excessive polypharmacotherapy". This is defined as the use of 10 or more drugs simultaneously. Polymorbidity, irrational indications, wrong diagnostics of drug-related problems, but also changes in pharmacokinetics and pharmacodynamics common in the old age contribute to polypharmacotherapy. It is important that pharmacotherapy in the old age must be simple, effective and safe.

Methods: Using the electronic database PubMed, all studies on the subject "Polypharmacotherapy in Old Age" published in 2005-2015 were reviewed. The data were summarized in tables. Studies that included causal factors (predictors) of polypharmacotherapy were also evaluated. The most frequently prescribed drugs in geriatric patients with polypharmacotherapy were recorded in a separate table.

Results: In this diploma thesis, the prevalence of polypharmacotherapy was compared from 81 studies. We found that the prevalence of polypharmacotherapy in seniors in long-term care facilities was higher (range of prevalence was 40,0 - 93,0 %) than prevalence of polypharmacotherapy in seniors living in the community (26,0 - 44,2 %). Several significant causal factors (predictors) of polypharmacotherapy were identified by the literature search, particularly the dependence on instrumental activities of daily living, polymorbidity and more prescribing physicians. Also higher age was stated as a strong causal factor. With increasing age there is a higher risk of polypharmacotherapy (OR=1.78, 95% CI (1.29-2.45), $p < 0.05$). The most commonly prescribed medications in seniors with polypharmacotherapy were antihypertensive, antithrombotic and antiulcer drugs.

Conclusion: Most studies describe the prevalence of polypharmacotherapy in seniors in developed countries (primarily in the USA, Canada and UK). No studies from developing countries were published in the period 2005-2015. It is evident from available results that

the prevalence of polypharmacotherapy in different countries varies. This may be caused by non-uniform definition of polypharmacotherapy, by the availability of drugs, but also by different attitudes to treatment. The diploma thesis summarized in detail the results of studies that were published in 2005-2015 on theme polypharmacotherapy in older patients. Results of this work will be used in follow-up research of the EU COST Action IS1402 initiative.

Key words: polypharmacy, polypharmacotherapy, multiple drug use, prevalence, predictors, risk factors, elderly, seniors, older adults, geriatric patients, geriatric population