

ABSTRACT

Introduction: Older persons usually suffer from multiple chronic disorders and consequently use more medications than younger adults and often polypharmacy. Polypharmacy is, unfortunately, one of the risk factors for negative outcomes in the old age. The aim of this diploma thesis was to summarize by narrative literature review the negative outcomes of polypharmacy in older adults documented in pharmacoepidemiological studies published between 2005 and 2015 years. The outputs of this diploma thesis create part of results of the research subgroup “Aging and Changes in the Therapeutic Value of Medications in the Aged” (Department of Social and Clinical Pharmacy, Faculty of Pharmacy, Charles University) and the EU COST Action initiative IS1402 (2015-2018).

Methods: Using datasets of Web of Science, PubMed and Embase, the narrative literature review was conducted in the period 2014 - 2015, in which we summarized outcome studies dealing with negative outcomes of polypharmacy in older patients published between 2005-2015 years. Key words for the literature review were: „seniors, older patients, elderly, older age, polypharmacy, polymedication, multiple drug use, negative outcomes, impact, hospitalization, mortality, adverse reactions, adverse drug events, costs, expenditures. We identified 563 studies during the primary literature search and after reading abstracts 496 (87%) of studies were excluded because they did not focus on polypharmacotherapy and negative outcomes, and 70 (13%) studies were summarized into tables. Summary tables included data on design of pharmacoepidemiological studies, main negative outcomes associated with polypharmacy and limitations of published studies.

Results: We found out 21(30 %) prospective, 27 (38,6 %) retrospective (31,4 %) and 22 cross-sectional studies. The most of the studies included seniors 65 years and older. Other age categories were 70, 75 or 80 years and more. Studies were mostly documented in ambulatory care, acute care, homes of the patients and nursing homes. Main outcomes positively associated with polypharmacy were higher mortality, increased occurrence of falls and adverse drug reactions, hospitalizations, rehospitalizations, poor nutritional status and non-adherence. Polypharmacy was not significantly associated with cognitive decline and the length of hospital stay.

Conclusion: Based on literature review of until now published studies we confirmed that polypharmacy in older adults have mostly negative impact on mortality, occurrence of falls,

averse drug events, higher risk of hospitalizations and non-adherence in older patients. Polypharmacy was not significantly associated with the length of hospital stay and cognitive decline in the majority of studies. Further outcome studies using adequate methodology are needed (prospective design, same definition of polypharmacy, well-defined control group, sufficient number of patients and sufficient number of patients and sufficient length of follow-up).

Keywords: polypharmacy, negative complications, outcomes, seniors, geriatric patients, hospitalizations, mortality, adverse drug reactions, adverse drug events, healthcare costs

Support: The study was conducted under the EU COST Action IS 1402 initiative “Ageism - a multi-national, interdisciplinary perspective”, working subgroup WG1b “Healthy clinical strategies for healthy ageing” and with the support of SVV program 260 417 and the scientific program PROGRESS Q24 at the Department of Social and Clinical Pharmacy, Faculty of Pharmacy in Hradec Králové (scientific subgroup Aging and Changes in the Therapeutic Value of Medications in the Aged, chair: Fialová D, PharmD, Ph.D.)