A prospective study on potentially inappropriate medications in elderly

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Background:

Polypharmacy is common in elderly and is the principle cause of potentially inappropriate medications (PIMs), which encompasses overprescribing, underprescribing and misprescribing. In this study the prevalence and implications of PIMs, in patients attending Geriatric Out Patient Department (OPD) at AIIMS New Delhi, India, were determined using Updated Beers criteria 2015.

Methods:

Elderly subjects (more than or 60 years), of either sex, receiving 2 or more medications for one or more chronic ailments, attending Geriatrics OPD, at AIIMS New Delhi, (except patient with any terminal illness, HIV, mental disorders or have undergone organ transplant), were included. Their prescriptions were scanned and assessed for PIMs, drug-drug and drug disease interactions, according to Beers criteria. Patients were also followed up telephonically at least once in 6 months for adverse events. The results were analysed by using suitable regression models for PIMs with age, sex, multimorbidity and polypharmacy as well as ADRs with age, sex, multimorbidity, polypharmacy and PIMs.

Results:

380 patients, average age of 65.39 ± 4.74 (215 males, 165 females) were enrolled. 88% people were having more than or 2 ailments, frequent being hypertension, diabetes mellitus, Chronic Obstructive Pulmonary Disorder, Coronary Artery Disease, hypothyroidism and osteoarthritis. Distribution of disease among genders, were similar except hypothyroidism (more in females). On an average each patient was prescribed 6.7 ± 2.1 medications. 65% of prescriptions were having one or more PIMs and 15% of total prescribed drugs were PIMs as per Beers criteria. 70% of all prescribed PIMs belonged 'to be avoided' category, on the other hand 20%, 9% and 1% were identified under 'to be used with caution', 'drug-drug interaction' and 'drug dosage reduction with decreasing renal function', respectively. 63 adverse drug reactions (ADRs) were reported, of which 49% were grade 1 and rest were grade 2 (17%), 3 (21%) and 4 (13%). A statistically significant correlation was observed between multimorbidity, polypharmacy and PIMs as well as between polypharmacy, PIMs and ADRs.

Conclusion:

In elderly, a proper risk and benefit analysis of each drug prescribed should be done and there is a need for development of indigenous guidelines and imparting training to decrease the use of inappropriate medications and associated risks.