

Polypharmacy: A Global Risk Factor for Elderly People

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World Health Organization has evaluated that in every nine people there is one elderly people, i.e. of age 60 years or older. This value is to be expected to increase to one in five people by 2050 accounting for about half of the total growth of the world population. Ageing population is not just a concern for high-income countries. The majority of older people already live in low- and middle-income countries, and this is where some of the fastest rates of ageing are occurring. This demographic transition in the elderly population constitutes a significant challenge for health authorities worldwide as with advancing age multiple chronic diseases such as hypertension, diabetes mellitus, arthritis, chronic heart disease, renal diseases, etc. are associated. As a result of which elderly people tend to take multiple medications in a day that can be referred to as polypharmacy. There is no as such standard definition of polypharmacy. It can be explained as the use of multiple medications generally referred to five or more prescribed drugs per day and/or the administration of more medications than are clinically indicated, representing unnecessary/unwanted drug use.¹ Various studies globally have shown that on an average 2-9 medications per day are taken by the elderly people.¹ The prevalence of inappropriate medication used by the elderly people was found to be from 11.5-62.5%.²

Polypharmacy is an area of concern for elderly because of several reasons. Elderly people are at a greater risk for adverse drug reactions (ADRs) because of the metabolic changes and reduced drug clearance associated with ageing; this risk is furthermore exacerbated by increasing the number of drugs used. Potential of drug-drug interactions is further increased by use of multiple drugs. In a case-control study carried out among old age people, polypharmacy was found to be an independent risk factor for hip fractures.³ Polypharmacy may sometimes lead to "prescribing cascades."⁴ Prescribing cascade is said when signs and symptoms (multiple and nonspecific) of an ADR is misinterpreted as a disease and a new treatment/drug therapy is further added to the earlier prescribed treatment to treat the condition. This inherits the potential to develop further more side-effects and thus making a prescribing cascade.

The symptoms caused by polypharmacy is unfortunately usually demented with the normal aging signs and symptoms, which can be: Tiredness, sleepiness, or decreased alertness, constipation, diarrhea, or incontinence, loss of appetite, confusion, falls, depression or lack of interest in your usual activities, weakness, tremors, visual or auditory hallucinations, anxiety or excitability, and/or dizziness.

Polypharmacy can lead to ADRs, mostly due to over-the-counter medications. The most consistent risk factor for ADRs is the number of drugs being taken, i.e. as the number of drugs taken increases, the risk of ADR increases exponentially. Polypharmacy may also lead to decreased medication compliance, poor quality of life, and unnecessary drug expenses.⁵

In respect to oral health, the most common adverse effect of polypharmacy, reported is dry mouth syndrome or xerostomia. Drugs/medications that can cause a dry mouth includes cardiovascular medications (diuretics, calcium channel blockers), anti-depressants and antipsychotics, sedatives, central analgesics, anti-Parkinson's medications, anti-allergy medications, and antacids.⁶

Evaluation of polypharmacy is of important concern in an elderly patient so as to avoid all the possible adverse effects. Comprehensive medication review and risk assessment should be carried out by interdisciplinary team to identify the polypharmacy and its adverse effects. It can be carried out using various tools like Assess Review Minimize Optimize Reassess, Screening Tool to Alert Doctors to the Right Treatment, Screening Tool to Older Person's Potentially Inappropriate Prescriptions. ADR probability scale and the Trigger tool for measuring Adverse Drug Events in the Nursing home helps in evaluating the cause and effect of medication errors resulting in ADRs. Studies have shown that Comprehensive Geriatric

Assessment has proved to be effective in reducing the number of prescriptions and daily drug doses for patients by facilitating discontinuation of unnecessary or inappropriate medications.⁷

To reduce the incidence and adverse effects of polypharmacy medication regimes of elderly patients should be evaluated monthly. A single agent/drug should be prescribed instead of multiple drugs for the treatment of a single condition, if possible. Medications should be started with the lower drug dosage where clinically indicated and if required incremental increase can be done. Drugs that can be given once or twice a day should be preferred over the drugs given three times a day. Drugs that are suspected to cause a problem should be discontinued. If the drug taken has no therapeutic beneficial effect or clinical indication it should be eliminated. Unessential drugs should be identified and eliminated prescribed by different health care providers for the same condition/disease. Safer drugs should be substituted with the higher risk medications.

Identifying and avoiding the polypharmacy can lead to better outcomes in the elderly patients and also helps in improving the quality of life. Medication review is an essential part in the elderly patient to avoid adverse effects that can be caused due to polypharmacy.

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