

A Review Study on Polypharmacy in Geriatric Patients

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ABSTRACT:

Polypharmacy, defined as the use of multiple drugs or more than that are medically necessary, is a growing concern for older adults. polypharmacy would include the use of drugs that are inappropriate, ineffective, or duplicate therapies. There is an increased risk of adverse health events, such as greater healthcare expenses, adverse drug events (ADEs), drug interactions, medication non-adherence, lower functional status, and geriatric syndromes, with this increase in the use of many medications. Polypharmacy has been common among the elderly population due to the need to treat the various disease states that develop as a patient ages.

KEYWORDS: Polypharmacy, Geriatrics, Consequences, Intervention

I. INTRODUCTION

Polypharmacy, defined as the use of multiple drugs or more than that are medically necessary, is a growing concern for older adults. According to this concept, polypharmacy would include the use of drugs that are inappropriate, ineffective, or duplicate therapies. This definition calls for a clinical review of treatment plans even though it is more clinically applicable. Around 50% of older persons take one or more drugs that are not prescribed by a doctor. Polypharmacy is strongly correlated with unfavourable clinical outcomes. Elderly people should be concerned about polypharmacy for a number of reasons [1]. Due to age-related metabolic changes and decreased drug clearance, elderly adults are more likely to experience adverse drug reactions (ADRs), a risk that is further increased by taking more medications. Use of various drugs further increases the risk of drug-drug interactions.

Moreover, polypharmacy is likely to have a negative impact on older individuals health more frequently, particularly when associated with

functional decline, increasing levels of multimorbidity, and frailty [2]. Although polypharmacy in the elderly may be beneficial, there are also potential drawbacks, such as decreased adherence, adverse medication events, higher health care utilisation, falls, cognitive decline, and mortality. In the over-60 age group, prescription drug consumption has steadily increased. Reduced total body water, decreased lean body mass and body fat, decreased serum albumin and altered protein binding, decreased liver phase one metabolism, decreased renal plasma flow, decreased glomerular filtration rate, and decreased renal clearance are all associated with the altered physiology of old age [3]. In this article, we discuss a number of crucial factors that are important to take into account while optimising polypharmacy, including prescribing the right amount of medication, pharmaceutical formulations, the inclusion of elderly patients in clinical trials, and patient adherence.

ROOT CAUSES OF POLYPHARMACY

An ageing population with comorbidities that require several medications, as well as an increase in the accessibility of newer drugs .People who self-medicate with over-the-counter drugs and natural remedies without fully comprehending the negative side effects and combinatorial consequences .A "prescribing cascade," which happens when people take a medicine and experience adverse effects that a doctor interprets as signs of a sickness and necessitate more treatment [12].

The patient sees various doctors and fills prescriptions at various pharmacies, but it is not kept clear to all parties what each other is doing. Redundancy is caused by inefficient coordination and communication among healthcare professionals .Patients self-medicating with over-the-counter medications without awareness and clear understanding of the adverse reactions and

interactive effects pertaining to these medications. Increased comorbidities in this population invite increased medications. One patient often consults multiple physicians and continues with each prescription, without proper therapeutic reconciliation.

Crosspathy: Availability of crosspathy: Ayurveda, herbal medicines. Often concomitant use of such medication causes polypharmacy. People using over-the-counter pharmaceuticals for self-medication without being aware of or clearly understanding the side effects and interacting effects associated with these drugs [7]. The demographic in question has more comorbidities, which calls for more medicine. The availability of newer drugs and interest in them. The same patient frequently sees several doctors and follows each prescription without sufficient therapeutic reconciliation.

CONSEQUENCES OF POLYPHARMACY

Contrary to popular belief, polypharmacy has a lot of drawbacks. In particular, the cost of managing several drugs has been linked to higher health care expenses as well as a higher risk of adverse drug events (ADEs), drug interactions, medication non-adherence, decreased functional ability, and multiple geriatric syndromes.

Increased healthcare cost:

Both the patient and the healthcare system incur additional costs as a result of polypharmacy. A retrospective cohort study discovered that polypharmacy was linked to a higher chance of using potentially inappropriate medications, a higher risk of outpatient visits and hospitalisation, and a higher risk of medical costs, which rose by almost 30%. Another Swedish study found that the cost of prescription drugs increased by 6.2% for people using five or more medications, and by 7.3% for people taking ten or more [8].

Adverse drug event:

According to a population-based study, outpatients who took five or more drugs had an 88% higher risk of developing an adverse drug event (ADE) than those who used fewer medications. Compared to patients taking fewer prescriptions, nursing care residents who take nine or more medications had ADE rates that are twice as high [5]. A patient on more than five drugs was approximately 4 times as likely to be hospitalised for ADE, according to another study examining unexpected hospitalisations in older veterans.

Anticoagulants, NSAIDs, cardiovascular drugs, diuretics, antibiotics, anticonvulsants, benzodiazepines, and hypoglycemic drugs are among the frequent pharmacological classes linked to ADEs [10].

Drug interactions:

Drug interactions are more likely to occur in older people who take multiple medications. The likelihood of a drug-drug interaction increases with the quantity of pharmaceuticals. To be more specific, the risk jumped to 100% when a patient was discovered to be taking 20 or more prescriptions, compared to 50% for those using 5 to 9 medications. In a study of older people living in the community, nearly 50% of patients showed signs of possible drug interactions [13]. Preventable ADEs and hospitalisations for medication-related reasons are frequently caused by drug-drug interactions. So, while prescribing any new medications, healthcare professionals should consider the likelihood of a drug-drug interaction.

In the elderly population, polypharmacy has a number of detrimental effects, including an increase in adverse drug responses, falls, fragility, and even mortality. In the elderly population, polypharmacy increases the risk of poor medication adherence and missing doses. More physician awareness, better drug administration and adherence, initiatives to lessen self-medication, and incorrect crosspathy are some examples of mitigation actions in this area. The occurrence of side effects, drug interactions, adverse drug reactions, non-adherence, and the "geriatric syndrome" can all be increased by polypharmacy. Sedation, nephrotoxicity, hepatotoxicity, cardiotoxicity, disorientation, vertigo, hypotension, and hypoglycemia are typical adverse reactions. Older people are more likely to utilise potentially inappropriate medications (PIMs.) [9]

HOW TO OVERCOME POLYPHARMACY RELATED PROBLEMS IN GERIATRIC PATIENTS:

The study's primary focus is on the problems associated with polypharmacy in older individuals and prospective pharmaceutical techniques to maximise the usage of several medications. Despite the long-standing unfavourable perception of polypharmacy, the distinction between suitable and inappropriate polypharmacy is receiving more attention. Ageing and multimorbidity, or these two interrelated variables, are to blame for the reported sharp

increase in polypharmacy prevalence worldwide. Yet, the present healthcare paradigm significantly raises the likelihood of polypharmacy in older persons as well. Surely, it is a consequence of single-disease centred guidelines pushing medication as a typical approach[10]. Unwanted consequences of this strategy include challenges with multimorbidity cases integrating care, poor communication between patients, carers, and their many care providers, and a lack of patient-focused care plans.

A more conservative approach accepts that not every condition is automatically the reason for taking a medication, allowing both the prescriber and the patient more freedom in making their choices based on accepted priorities. In contrast, "defensive medicine" makes the start of therapy easy and always correct. In actuality, the management solutions for polypharmacy that we found in our search mainly aim to remedy polypharmacy. One or more of the following are specific objectives of pertinent interventions:

1. Reduction of polypharmacy (reduced prescription and/or use of drugs)
2. Increasing the use of a recommended medication
3. Reducing expenses (such as those related to drugs or the overall cost of the healthcare system)
4. Improving patient medication compliance
5. Improving the efficiency of drug treatment (e.g., avoidance of hospitalisations, etc.)
6. Ensure patient security (e.g., avoidance of adverse drug reaction)

Patients are not seen as individuals who actively take any formalised action against polypharmacy, despite the fact that the role of patients is stressed and pertinent recommendations include improving patient health literacy and awareness of their complex multiple prescription regimes[14]. Considering how little general practitioners know about the importance of their current active role in addressing polypharmacy, it is even recommended that GPs may help patients by "inviting" their involvement to polypharmacy and medication safety.

II. CONCLUSION

Polypharmacy has been common among the elderly population due to the need to treat the various disease states that develop as a patient ages. However, there is an increased risk of adverse health events, such as greater healthcare expenses, adverse drug events (ADEs), drug interactions, medication non-adherence, lower functional status,

and geriatric syndromes, with this increase in the use of many medications. Elderly patients frequently require the prescription of various medications due to their numerous illnesses. However, a doctor should also proceed with greater caution, keeping in mind the likelihood of harmful drug interactions leading to toxicity, unsuccessful therapy, or loss of pharmacological effect. Hence, regular examination and monitoring of patients' medication regimens is required, along with appropriate therapeutic reconciliation. According to a study of the literature on polypharmacy in the elderly, five or more visits to a primary care physician elevated the likelihood of polypharmacy by a factor of fifteen. Almost 75% of all appointments with primary care doctors conclude with a written prescription. It is also conceivable that treating the high symptom burden among persons with numerous diseases could raise the incidence of polypharmacy. Physicians, nurses, and pharmacists will need to work in unison to reduce polypharmacy. Identifying probable drug combinations that might result in adverse drug events and negative health effects in those who take multiple medications. Also, our study demonstrated that necessity of regular surveillance to keep an eye on polypharmacy.

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