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Geriatric Clinical Pharmacology

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Introduction

Geriatric patients are an elderly population with various comorbidities, most of which have serious functional effects. Patients in the elderly have reduced homeostasis and significant interindividual variation. A thorough geriatric evaluation can be utilised to inform therapy, including medication, and capture the complexity of the issues that plague fragile older people. When prescribing for geriatric patients, it's important to understand how well the prescription works in elderly patients who are weak, evaluate the risk of adverse drug events, discuss the harm:benefit ratio with the patient, choose the dosing schedule, and carefully monitor the patient's reaction. To do this, it is necessary to assess the evidence from clinical trials, apply it to elderly, frail patients by understanding how pharmacokinetic and pharmacodynamic changes affect patients, and pay attention to medicines. A subset of frail elderly persons with numerous comorbidities, geriatric patients typically have serious functional consequences. A poorly understood but growingly researched illness called frailty is characterised by a high propensity to disease, an anticipated loss in physical function, and a significant chance of death. The frailty syndrome is characterised by an abnormal loss of lean body mass, decreased mobility and gait efficiency, and poor endurance accompanied by feelings of depletion and fatigue [1].

Description

A thorough geriatric assessment and an awareness of frailty can help the doctor create multidisciplinary treatment strategies that are both efficient and effective. Instead of the precise disease-based outcomes that are often explored in clinical trials, the primary therapeutic goal of such treatment programmes in geriatric patients is frequently broad functional outcomes. Additionally, this method makes it easier to weigh the benefits and risks of prescribing a medication for a specific condition in the context of comorbidity and disability, forecasts potential changes in pharmacokinetics and pharmacodynamics, and provides information on what support the patient might need to follow the recommended medication schedule. Older adults who live in communities have been shown to have worse self-reported functional status and a larger deterioration in objective physical performance tests over a 4-year period when exposed to benzodiazepines. Currently, recommendations from expert consensus statements, such as the recently revised Beers criteria, are the main guidelines for potentially inappropriate pharmaceutical usage in older persons. However, neither the health outcomes of older hospitalised patients nor the loss in self-reported functional status in community-dwelling older adults are associated with this exposure. In some studies, testosterone, 3-hydroxy-3-methylglutaryl (HMG) CoA reductase inhibitors, and angiotensin-converting enzyme (ACE) inhibitors have been linked to a postponed functional deterioration in older persons. However, ACE inhibitors have also been linked to myopathy, disability, and a tendency toward more falls, as well as decreased balance, a risk factor for falls, and HMG CoA reductase inhibitors [2,3].

It is also evident that growing older is linked to a higher risk of adverse drug reactions to a subset of medications, maybe independent of polypharmacy and pharmacological changes. The advent and widespread usage of cyclooxygenase-2 selective NSAID medicines has made the relationship between ageing and NSAID-induced adverse effects a significant problem in recent years. In older people taking NSAIDs, the risk of upper gastrointestinal haemorrhage or perforation rises significantly. The approximate number of patients that must be harmed annually in people over 70 to cause an upper gastrointestinal haemorrhage or perforation. Additionally, older individuals exposed to NSAIDs had a 1.7-fold higher likelihood of undergoing antihypertensive medicine in the future as well as a higher prevalence of renal impairment. Epidemiological and observational studies have supported the link between medication usage and falls. The odds ratio for one or more falls was 1.73 (95 percent confidence interval: 1.52-1.97) for exposure to any psychotropic medication, according to a systematic review that looked at the connection between psychotropic drugs and falls in older people. There were also few differences in risk among the various classes of psychotropic drugs. In this regard, the expectations relating to falls in older individuals have not been met by the younger generation psychotropic medicines. Selective serotonin blockers and more recent antipsychotic medications appear to be at least as likely to cause falls and fractures in elderly patients as older tricyclic antidepressants and earlier antipsychotic medication [4,5].

Prior to assuming that polypharmacy is wholly incorrect, it's critical to weigh its potential advantages in a given situation. Comorbidity and polypharmacy-affected people are frequently excluded from clinical studies. When studying subjects with various illnesses, the intervention and result frequently centre on a single disorder. The advantages of polypharmacy, for instance, have been well supported by clinical studies involving individuals with diabetes mellitus. It has been demonstrated that the use of ACE inhibitors, antihypertensives, antiplatelet medicines, and antihyperlipidemic medications all significantly reduce mortality in these diabetic individuals [1,2].

Conclusion

The majority of sickness affects the aged, especially the frail and geriatric patients. Although observational studies show a higher rate of adverse drug reactions in these older patients and certain clinical trials have failed to prove therapeutic advantages reported in younger adult participants, these older patients have the greatest potential to benefit from medicine. As a result, rather than using general prescribing recommendations, the choice to administer drugs to geriatric patients involves individual appraisal of danger and benefit. The clinician must be fully aware of the stated severity of the risks and benefits of the drugs in order to accomplish this.

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