

SHORT COMMUNICATION 8

Redefining iatrogenic falls due to medications in geriatric patients

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ABSTRACT Introduction:

Iatrogenic falls in geriatric patients, particularly induced by medications, are a growing concern in healthcare due to the global population ageing and the increasing prevalence of polypharmacy. Geriatric syndromes, including falls, delirium, cognitive impairment, orthostatic hypotension, incontinence, and chronic pain, can significantly lessen the success rate of pharmacological treatments and raise the risk of adverse drug reactions (ADRs). Treatments for chronic pain, such as opioid agonists, are also associated with delirium and a complexity of falls. The proposed redefinition of the term "iatrogenic falls" due to medication in geriatrics can be defined as "drug-induced iatrogenic falls, as adjoining the specification based on the nature of falls, and the type of iatrogenic factor.

Conclusion:

From a clinician's perspective, addressing "drug-induced iatrogenic falls" requires a multifaceted approach that includes regular medication reviews, risk assessment, personalised prescribing and deprescribing, and patient education.

Keywords

Cognitive, falls, geriatric, iatrogenic, polypharmacy, risk

Introduction

As the global population ages and the prevalence of polypharmacy increases, falls have become a leading cause of morbidity and mortality among older adults. The term "iatrogenic triad" emphasises the interaction between polypharmacy, drug-drug interactions, and the use of potentially inappropriate medications in geriatric patients. A recent study by Novaes et al. revealed nearly a 50% association between polypharmacy and the use of potentially inappropriate medicines among geriatric patients. [1]

Traditionally, iatrogenic falls have been defined as unintended falls caused by medical interventions, including medications. In geriatric patients, this phenomenon is widespread due to age-related physiological changes, comorbidities, and increased sensitivity to drugs. The conventional definition may be too broad and does not sufficiently distinguish druginduced falls from other iatrogenic causes. The proposed redefinition of the term "iatrogenic falls" due to medication in geriatrics is "drug-induced iatrogenic falls," which refers to patient falls directly or indirectly caused by pharmacological agents that impair physiological or cognitive function, increasing fall risk. These falls may result from predictable side effects, such as orthostatic hypotension or sedation, or from unintended interactions and cumulative effects of polypharmacy. Most recent research articles from 2014–2024 reportedly use the term "fall risk increasing drugs" more often instead of the term "iatrogenic" related falls or adverse events. [1]

Consequences of Geriatric Syndromes

Geriatric syndromes are secondary complications that affect the physical, psychological, and social well-being of elderly patients. It has been identified that the presence of geriatric syndromes, such as falls, delirium, cognitive impairment, orthostatic hypotension, incontinence, and chronic pain, can significantly delay the effectiveness of treatments [2]. These syndromes may also increase the risk of adverse drug reactions (ADRs) and contribute to a higher rate of prescriptions, which in turn adds to frailty. The side effects of antipsychotic medications often lead to increased susceptibility to delirium and incontinence. Similarly, medicines for chronic pain, especially opioid agonists, can cause cognitive issues such as dementia and ultimately increase the risk of falls.

In the Malaysian geriatric care context, Mazlan et al. revealed that over half of users of fall risk-increasing drugs (FRIDs), mainly elderly individuals with common co-morbidities such as hypertension, are at high risk of falls. Many antihypertensive medicines are categorised as FRIDs, contributing indirectly to fall risk. Geriatric individuals often receive FRIDs, as this population is at a significantly higher risk of experiencing multiple falls within the following year. The risk of falls increases with disease severity and co-morbidity, which can lead to

poorer health outcomes, more complex clinical management, and higher healthcare costs [3]. Additionally, a gap was identified in the medication management systems for elderly residents in residential aged care facilities, where some individuals might be responsible for their medication without adequate supervision, potentially resulting in inappropriate use.

Medication factor that contributes to 'Geriatric Giants"

Geriatric individuals often present with multiple comorbidities or related illnesses due to accumulated medical conditions. The concept of "geriatric giants" includes a group of symptoms that significantly contribute to mortality and morbidity in older patients, complicating their treatment. These geriatric giants can be classified into five categories: iatrogenesis, immobility, incontinence, instability, and impaired cognition.

Introgenesis refers to the adverse effects of medications. mainly due to polypharmacy—defined as the use of five or more medications—which can lead to falls, prolonged hospital stays, fractures, functional decline, and fear of falling (FOF). Furthermore, approximately 15-30% of geriatric patients suffer from urinary incontinence, which can be worsened by certain classes of medications, including antidepressants, antihistamines, antipsychotics, and opioids. In elderly individuals, urinary incontinence caused by weakened detrusor muscle results in urinary retention and an increased risk of falls. Similarly, impaired cognition or thinking skills may arise from the side effects of antipsychotic medications, subsequently causing delirium or confusion in older patients. As cognitive function declines, it negatively impacts decision-making, timing, and motor control during movement, increasing the likelihood of falls [4].

Future direction and research gaps

Within this context, the definition of iatrogenic falls should be refined and utilised by clinician and researchers. Clinically, there must be a paradigm shift in proactively conducting thorough medication reconciliations to ensure that all prescribed drugs are necessary. This involves evaluating potential alternatives that may pose less risk and adhering to guidelines, such as the Beers Criteria, to avoid potentially inappropriate medications for geriatric patients [5].

Conclusion

Iatrogenic falls caused by medications in geriatric patients pose a significant challenge that demands a revision and enhancement of clinical strategies. From a clinician's perspective, addressing this issue effectively requires a multifaceted approach, including regular medication reviews, comprehensive risk assessments, personalised prescribing and deprescribing, and educating patients along with training healthcare practitioners about the

adverse effects of drugs. As healthcare systems continue to evolve to meet the needs of an ageing population, prioritising fall prevention and safety among older adults will be a key challenge that clinicians must address.

Abbreviations

Adverse drug reactions (ADR), Fall risk-increasing drugs (FRID), Fear of falling (FOF)

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Authors' contribution

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b. Agreement to be accountable for all aspects of the work:

TNM, MI

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