Letter to the Editor

Geriatric Pharmacotherapy and Adverse Events

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To the Editor:

As many as 13% of the United States population are 65 years of age or older.¹ This population is expected to double by 2030. Although elderly patients account for only 13% of the population, they consume about 30% of prescription medications and 40% of over-the-counter medications.¹ It is becoming increasingly important for health care providers to be cognizant of the special precautions that must be taken into consideration with the use of medications in the elderly population.¹ This population is viewed as generally being at risk for the development of the adverse effects related to medications. These effects can be attributed to a myriad of age-related characteristics, illnesses, or disease states. Some of the most widely identified issues include the reduction of organ function (eg, liver or kidney function), fragility, and co-occurring disease progression.² Advanced age is also commonly associated with the development of multiple illnesses and altered pharmacokinetics and pharmacodynamics as they relate to medications. For example, there is delayed renal elimination of drugs or increased sensitivity to medication classes such as anticholinergics, hypnotics, or sedatives in elderly patients.³ For this particularly sensitive population, careful consideration must be given to age-related renal decline. Proper evaluations should be routinely performed to assess the risks versus benefits of initiation and/or continuation of specific medications classes based on organ function and the patient's ability to tolerate a medication. This assessment process can also help to optimize care or lead to the discontinuation of medications when deemed appropriate to curtail polypharmacy. Keeping a medication on a patient's medication profile longer than it should be prescribed has the potential to cause more harm than good in the elderly population.

Given the variety of health conditions and diagnoses that exist with this population, multiple medication use is common to assist with improving and even extending the quality of life and in certain situations curing the disease.⁴ This population can experience

adverse drug events that are associated with multiple medications being prescribed, leading to severe drug interactions and/or reactions.^{2,4} Adverse drug reactions or events can be associated with significant morbidity and mortality in older adults regardless of their setting.

Because of the vital role that medications play in the lives of the elderly population, this population utilizes a disproportion amount of prescription drugs.⁵ Most clinicians have come to realize that special precautions must be taken when it comes to prescribing medications in this sensitive population, but clinicians who are not trained in geriatrics may not know whether it is appropriate to prescribe certain medication classes.⁶ Clinical practice guidelines and age-specific criteria can help to curtail the majority of the adverse events that can occur. Clinical practice guidelines for most treatments are based on clinical evidence and expert consensus; a majority of clinicians rely on these guidelines to aid them in the decision-making process. Unfortunately, elderly patients are underrepresented in clinical trials, which causes a deficiency of useful data to help guide practice, thus creating many challenges for prescribers.^{5,7}

Once a medication has been prescribed, it can be difficult to discontinue; clinicians must consider several factors, such as the goals of treatment or the side effects related to medication withdrawal.⁸ Given the frailty of the elderly population, these are important factors for any clinician to consider due to the increased risk of adverse effects or potential fatality. The selection of appropriate and best pharmacotherapy in any elderly patient can be challenging, but there are several treatment strategies that cover aspects of medication appropriateness in this population.⁹ Ultimately, the final selection should be based on age, functional status, limitations/impairments, tolerability, and the potential development of adverse reactions.

For clinicians who face uncertainty when it comes to determining whether a medication can be used in an elderly patient, the Beers criteria, originally published in 1991 and updated in 2012, has become recognized as

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a consensus-based, premier list of medications that are considered to be potentially inappropriate for use in the elderly population.^{5,10} Due to the fact that medication-related problems are common with the elderly population, preventative measures can limit the poor outcomes that can result. Use of the Beers criteria as a guide to avoid inappropriate and high-risk medication classes among this population can be an effective strategy for reducing medication-related adverse reactions.¹⁰

For more than 20 years, the Beers criteria has aided in the reduction of inappropriate prescription of medications in the elderly population and has provided specific reasons for the nonuse of these particular medications.

As it currently stands, prescribing providers can play an integral role in curtailing the inappropriate or incorrect use of medications in the elderly population. They can help to optimize medication effects if they are clearly aware of the possible adverse effects that can develop. There is a movement toward greater awareness of the consequence of administering certain medications in the elderly population without proper consideration, so education on the part of pharmacists can be the key to the initiation of more appropriate prescribing patterns and reduction of polypharmacy for this population.¹¹

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