



27. Potentially Inappropriate Medications (PIMs) for Older Adults

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Potentially inappropriate medications (PIMs) for older adults are defined as drugs that pose a risk of adverse effects that outweigh their benefits and/or for which there is insufficient evidence of benefit when safer or equally effective therapeutic alternatives are available. Senescence leads to changes in the pharmacokinetic and pharmacodynamic processes of several medications, affecting the balance between efficacy and safety in the treatment of different clinical conditions. Several evidence-based protocols and guidelines, supported by expert consensus, have been developed to assist in the appropriate selection of medications for older adults, thereby improving prescribing quality in clinical practice and exerting a preventive effect on adverse events. The Beers Criteria and the PRISCUS list are among the most widely used scientific tools in preventing the use of PIMs in older adults.

The Beers Criteria were developed in the 1990s (Beers et al., 1991) to identify classes of medications that should be avoided in older adults and to reduce adverse events and hospitalizations. Medications are classified into five main groups: (1) potentially inappropriate medications in older adults; (2) potentially inappropriate medications in older adults with certain conditions; (3) medications to be used with caution in older adults; (4) combinations of medications that may lead to harmful drug-drug interactions; and (5) medications that should be avoided or used at reduced doses in patients with impaired renal function. The most recent update occurred in 2019, when the American Geriatrics Society (AGS) stated that “*the best way to use the Beers Criteria begins with identifying potentially inappropriate medications being prescribed and, when appropriate, offering safer pharmacological or non-pharmacological treatments*”. The criteria were developed for application in adult patients aged 65 years or older across all health care settings, including outpatient, emergency, and institutional care, with the exception of palliative and end-of-life care. The goal is to improve medication selection, guide physicians and patients, reduce medication-related adverse events, and evaluate quality of care, costs, and patterns of medication use among older adults. The Beers Criteria are an important tool in reducing polypharmacy in older adults, as they can be used by physicians as a starting point for the process of deprescribing¹ PIMs and for developing an individualized, high-quality therapeutic plan.

¹ *Deprescribing is a relatively new term, defined as the planned and supervised process of dose reduction or discontinuation of a medication that may cause harm or offer no benefit when used long term.*

([http://www.sbrafh.org.br/inicial/desprescao/](http://www.sbrafh.org.br/inicial/despresricao/) accessed on January 25, 2022)



More recently, the PRISCUS list (adapted from the Latin *priscus* - old and venerable) was developed by the German Ministry of Health and tailored to the national pharmaceutical market. Similar to the Beers Criteria, it is based on expert knowledge and evidence-based recommendations for the safe use of medications and therapeutic alternatives in older adults (Holt et al., 2010). Some limitations of the criteria and lists mentioned above include the inclusion of only studies published in English, the reliance on observational studies, and the fact that certain subgroups of older adults, such as the oldest-old², have not yet been adequately studied. These tools also require adaptation according to the specific characteristics of the regions in which they are applied.

In Brazil, studies have shown that both the Beers Criteria and the PRISCUS list are useful for preventing the use of potentially inappropriate medications (PIMs) in older adults (Gorzoni et al., 2012), although with limitations due to the need to adapt them to the medications available in the Brazilian pharmaceutical context. Nevertheless, they are powerful tools grounded in the best scientific evidence and subject to systematic updates which, when combined with a detailed clinical assessment of each older patient, enable the optimization of the therapeutic plan.

References

American Geriatrics Society Beers Criteria® Update Expert Panel. Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults. *J. Am. Geriatr. Soc.* 67(4):674-694, 2019.

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Gorzoni ML, Fabbri RMA, Pires SL. Potentially inappropriate medications in elderly. *Rev. Assoc. Med. Bras.* 58(4):442-446, 2012.

Holt S, Schmiedl S, Thürmann PA. Potentially inappropriate medications in the elderly: the PRISCUS List. *Dtsch. Arztebl. Int.* 107(31-32):543-551, 2010.

² This still controversial term refers to the “older elderly” that is, individuals aged over 80 years, according to Brazilian Law No. 13,466/2017 (<https://laismarine.jusbrasil.com.br/artigos/488240894/a-criacao-do-superidoso#:~:text=No%20Brasil%2C%20considera%2Dse%20idoso,aos%20demais%2C%20necessitam%20de%20prioridades/>)