Overview of the 2019 Beers Criteria Update

By John Nguyen, PharmD Candidate
and Benjamin Webster, PharmD

Introduction:
The “Beers list” was first developed in 1991 by Dr. Mark Beers and his colleagues to describe a list of medications to be considered inappropriate for nursing home residents.1 Later in 1997 and 2003, Dr. Beers participated in an expert panel to update the criteria. In 1999 a partial list of the criteria was adopted by the Center for Medicare and Medicaid Services (CMS) as quality indicator measures for long-term care facilities (LTCF). In 2006, the National Committee for Quality Assurance (NCQA) took some of the “do-not-use” and drug-disease interaction criteria for one of their Healthcare Effectiveness Data and Information Set (HEDIS) measures.2 In 2011, the American Geriatrics Society (AGS) became the steward of the criteria and have been producing updates roughly every 3 years.3

In January 2019, the American Geriatrics Society (AGS) published an update to the 2015 Beers Criteria for Potentially Inappropriate Medication (PIM) Use in Older Adults. The criteria is intended for adults aged 65 years and older in all ambulatory, acute, and institutionalized settings of care. It is not intended for hospice and palliative care settings.4

All guidelines are meant to help guide clinicians, health professionals, educators, and researchers in their clinical decision making. As the guideline’s name suggests, the medications listed in the Beer’s Criteria are potentially inappropriate medications, not inappropriate medications. The Beer’s Criteria does not say “do not use this medication,” but offers a rationale behind which medications should be avoided.4

A list of treatment alternatives for medications in the 2015 Beers Criteria was published by the AGS to help practitioners develop appropriate treatment strategies.5 For the 2019 update, the Health in Aging Foundation published a list of alternatives to be used in adjunct with the 2015 alternative medication list.6 The authors stressed that these lists are not comprehensive, but should serve as a useful tool for practitioners.

The body of clinical evidence regarding the safety and efficacy of medication therapy continues to grow, which means new evidence of whether a drug is safe or not in older adults. The interdisciplinary expert panel reviewed data from January 1, 2015 to September 30, 2017, and around 70 modifications were made to the 2015 Beers Criteria. The modifications included new medications, clarifications of criteria language and rationale, and addition of selected drug-drug interactions.
Medications Added to the 2019 AGS Beers Criteria

**Potentially Inappropriate Medication (PIM) Use in Older Adults:**

- **Glimepiride** was added to the list of sulfonylureas to avoid due to a higher risk of severe prolonged hypoglycemia in older adults.
- **Methscopolamine** and pyrilamine were added due to their high anticholinergic activity.

**Drug-Disease or Drug-Syndrome Interactions That May Exacerbate the Disease or Syndrome:**

- **SNRIs** were added to the antidepressants to avoid in patients with a history of falls or fractures associated with increased risk in patients with history of falls or fractures.
- **Pimavanserin** was added as an exception to the list of antipsychotics to avoid in patients with Parkinson disease. Pimavanserin is a preferred antipsychotic in these patients because it seems less likely than most antipsychotics to precipitate worsening of Parkinson disease.

**Drugs To Be Used with Caution in Older Adults:**

- **Rivaroxaban** increases the risk of serious bleeding compared to other anticoagulants, according to emerging evidence.
- **Tramadol** was added to the list of drugs that may exacerbate or cause the syndrome of inappropriate antidiuretic hormone secretion (SIADH) or hyponatremia. Close monitoring of sodium levels is recommended.
- **Dextromethorphan/quinidine** has limited efficacy in patients with behavioral symptoms of dementia. It may also increase risk of falls and have significant drug interactions. This does not apply to patients with pseudobulbar affect.
- **Trimethoprim/Sulfamethoxazole** increases the risk of hyperkalemia when used with an angiotensin-converting enzyme inhibitor (ACEI) or angiotensin receptor blocker (ARB) in the presence of decreased creatinine clearance, according to new research.\(^7,8\)

**Clinically Important Drug-Drug Interactions:**

- Increased risk of overdose when **opioids** are used with any of the following: benzodiazepines, gabapentin, or pregabalin.
- Increased risk of phenytoin toxicity with concurrent use of phenytoin and trimethoprim/sulfamethoxazole.
- Increased risk of theophylline toxicity with theophylline and ciprofloxacin.
- Increased risk of bleeding with **warfarin** and the following drugs: ciprofloxacin, trimethoprim/sulfamethoxazole, or macrolides (excluding azithromycin).

**Medications that should be avoided or have their dosage reduced with decreased kidney function:**

- **Ciprofloxacin** has an increased risk of CNS effects and tendon rupture when the creatinine clearance (CrCl) is <30 mL/min.
- **Trimethoprim/sulfamethoxazole** has an increased risk of worsening of renal function and hyperkalemia when the CrCl <30 mL/min. It should be avoided when CrCl <15 mL/min.
The AGS specified that the following changes to medications do not mean they are now considered safe, but to keep the Beers criteria concise and focused on problems specifically for older adults.

Medications removed from the 2019 AGS Beers Criteria

- Ticlopidine and oral pentazocine are no longer on the US market due to low use.
- Histamine-2 receptor antagonists (H2RAs) were removed from medications to avoid in patients with dementia or cognitive impairment due to weak evidence of adverse cognitive effects. H2RAs are still considered drugs to avoid in patients with delirium.
- The following medications were removed because the concerns are not unique to older adults: Stimulating medication (e.g. oral decongestants, stimulants, theobromines) use in patients with insomnia, medications that lowered the seizure threshold (e.g. bupropion, chlorpromazine, olanzapine) in patients with a seizure disorder, and vasodilators for the cause of syncope.
- Aripiprazole is no longer the preferred antipsychotic agent in older adults with Parkinson disease due safety and efficacy concerns.
- Chemotherapeutic agents (e.g. carboplatin, cyclophosphamide, cisplatin, vincristine) were removed because they are highly specialized drugs and do not fit the scope of the criteria.

Notable clarifications/modifications to criteria language and rationale

- The age threshold to exercise extra caution for using aspirin for primary prevention of CVD was lowered to ≥70 years due to new evidence of a major increase in bleeding risk at a younger age.9-12
- The CrCl lower limit of when to avoid edoxaban was reduced to <15 mL/min due to a lack of evidence for the efficacy and safety of use in patients with CrCl <30 mL/min and to reflect current labeling.
- Thiazolidinediones, dronedarone, nonsteroidal anti-inflammatory drugs (NSAIDs) and cyclooxygenase-2 (COX-2) inhibitors should be used with caution in older patients with asymptomatic heart failure and avoided when symptomatic.

Conclusion

The 2019 Beers Criteria provides a list of medications that should typically be avoided in patients aged 65 years or greater. It is intended for older adults in most settings of care, except for hospice and palliative care settings. It is important to remember that the criteria are not absolute, but instead are intended to guide clinical decision-making. It should be used with other tools and management strategies to provide the best patient-centered therapy.
References:


