Beers Criteria
About the Guideline

- The aim of this 13-member interdisciplinary panel was to update the 2012 AGS Beers Criteria for Potentially Inappropriate Medication (PIM).

- The PIM list includes those best avoided in older adults, or prescribed at reduced doses, with careful monitoring.

- The AGS Beers Criteria is the most frequently consulted source about the safety of prescribing medication for older adults, and the use of the PIMs listed therein have been associated with poor health outcomes, including confusion, falls, and mortality (American Geriatrics Society, 2015).

- The AGS Criteria applies to all older adults, with the exclusion of those in hospice and palliative care.
About the Guideline (cont'd.)

- The literature search was performed July 1, 2014, and was limited to 10 years, from which panel members reviewed 342 studies, including 60 systematic reviews and meta-analyses, 49 randomized controlled trials (RCTs) and 233 observational/other publications.

- Features in this update include two new areas of evidence:
  - drugs for which dose adjustment is required based on specific kidney function
  - drug-drug interactions with potential for harm in older adults

- Close monitoring of drugs used in older adults is the responsibility of all healthcare professionals, consumers, and health systems.

- Avoiding PIMs is one strategy available to decrease the risk of adverse events in older adults.
**Key Evidence**

The key evidence in this guideline is presented in tables 2-10:

<table>
<thead>
<tr>
<th>Table 2:</th>
<th>Includes comprehensive list of medications to <em>avoid</em> in most older adults, excluding those in the palliative care or hospice setting</th>
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</thead>
<tbody>
<tr>
<td>Table 3:</td>
<td>Lists medications for older adults with specific diseases or syndromes to <em>avoid</em></td>
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<tr>
<td>Table 4:</td>
<td>Lists medications to be <em>used</em> with caution</td>
</tr>
<tr>
<td>Table 5:</td>
<td>New non-anti-infective drug-drug interactions of potential clinical importance</td>
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<tr>
<td>Table 6:</td>
<td>New non-anti-infective medications to <em>avoid</em> or dose adjust</td>
</tr>
<tr>
<td>Tables 8-10:</td>
<td>Highlight differences between the 2012 and 2015 guidelines</td>
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</tbody>
</table>
Noteworthy Changes

- Nitrofurantoin
- Antiarhythmic Drugs
- Non-steroidal anti-inflammatory drugs, Benzodiazepine Receptor Agonists
- Proton-Pump Inhibitors (PPIs)
- Desmopressin

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7.
Nitrofurantoin

- New evidence exists supporting the safe use of nitrofurantoin in individuals with a minimum creatinine clearance of 30mL/min. This is a change from earlier recommendations to avoid the use of nitrofurantoin in individuals with a creatinine clearance of less than 60mL/min. The long-term use of nitrofurantoin, however, is still to be avoided due to the risk of irreversible pulmonary fibrosis, liver toxicity, and peripheral neuropathy.
Antiarrhythmic Drugs

- The new guidelines remove the recommendation to avoid the use of antiarrhythmics (Class 1a, 1c, and III) as first-line treatment for atrial fibrillation.

- New evidence supports that outcomes for rhythm control are equal to or exceed the outcomes accomplished with rate control.

- Specific antiarrhythmics, however, will remain in the criteria, with recommendations for their use as listed below.
  - Amiodarone is still to be avoided as first-line therapy for atrial fibrillation, unless the patient also has substantial left ventricular hypertrophy, or heart failure.
  - Dronedarone is to be avoided in those with permanent atrial fibrillation, or those with severe or recently decompensated heart failure.
  - Disopyramide (Class 1a) should be avoided; it is highly anticholinergic.
  - Digoxin should not be first-line therapy for atrial fibrillation or heart failure, and daily dosing is not to exceed 0.125mg for any indication.
Non-benzodiazepine, Benzodiazepine Receptor Agonist Hypnotics (NBRAHs)

- This class includes eszopicline, zaleplon, and zolpidem, which are to be avoided, as their associated harms do not balance with their minimal efficacy for treating insomnia in this population.

- NBRAHs are also to be avoided especially amongst individuals with dementia or other cognitive impairments.
Sliding-Scale Insulin

- The recommendation remains to avoid the sole use of sliding-scale insulin, but there is further elucidation of what constitutes a sliding-scale regimen in this population.

- The use of correction insulin in conjunction with basal insulin does not constitute a sliding scale.
Proton-Pump Inhibitors (PPIs)

- New is the recommendation to *avoid* the use of PPIs beyond 8 weeks, without just cause.

- Five systemic reviews/meta analyses and multiple studies support an association between the use of PPIs and *Clostridium difficile* infections, fractures, and bone loss.
Desmopressin

- Desmopressin is to be avoided for treatment of nocturia or nocturnal polyuria in the elderly due to the higher risk of hyponatremia.
Noteworthy Changes (cont'd.)
Opioids

- Opioids have been added to the list of central nervous system medications to avoid in individuals with a history of falls or fractures
Antipsychotics

- Antipsychotics are to be *avoided* as first-line therapy for delirium, due to conflicting evidence on their efficacy
Drug-Drug Interactions

- New is Table 5, which lists drug-drug interactions (excluding anti-infectives) that are associated with harmful outcomes in older adults.

- Examples include a recommendation against the concurrent use of three or more CNS-acting medications, which is associated with increased risk of falls.
PIMs Based on Kidney Function

- The recommendations are based on consensus guidelines and lists drugs to be avoided or dose-adjusted based on the specific degree of patient kidney impairment.

- New to the list are several anticoagulants, as well spironolactone and triamterene.

- Specifically, the use of apixaban, edoxaban, and rivaroxaban are to be avoided due to clinical trial exclusion criteria and lack of known safety in this population, which may contradict the package insert.
Drugs with Strong Anticholinergic Properties

- Table 7 provides updated guidelines covering drugs with strong anticholinergic properties.

- Notably, the second-generation antihistamine loratadine has been removed from the avoid category.
Reference

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