Prescribing in Elderly PLWH

Age related co-morbidities ↓
Polypharmacy

Age related physiological changes ↓
Impact PK/PD effects of drugs

Drug-Drug Interactions (DDI)

Inappropriate drug/dosage use

Increased risk of:
- Adverse drug reactions
- Non-adherence
- Cognitive impairment
- Impaired balance and falls
- Morbidity and hospitalisation

Perform periodic medication reviews
Questions to consider when reviewing a prescription
- Is there an indication for the medication?
- Is this medication appropriate for elderly people?
- Is the dose correct (e.g. adjusted for the renal function)?
- Is there a significant drug-drug interaction?
- Is there a significant drug-disease interaction (e.g. delirium)?
- Is the duration of treatment acceptable?
- Is there any missing medication?
- Is the patient able to manage his/her own medications or is assistance required?

Check for DDIs:
- Between HIV drugs and other comedications (www.hiv-druginteractions.org)
- Between comedications

Check for inappropriate use of drugs:
- Beers
- STOPP/START

The Beers and STOPP criteria are tools established by experts in geriatric pharmacotherapy to detect and reduce the burden of inappropriate prescribing in elderly. Inappropriate medicines include:
- Those which in elderly persons with certain diseases can lead to drug-disease interactions.
- Those associated with a higher risk of adverse drug reactions in the elderly.
- Those that predictably increase the risk of falls in the elderly.
- Those to be avoided in case of organ dysfunction.

The START criteria consist of evidence-based indicators of potential prescribing omission in elderly with specific medical conditions.

References
# Top Ten Drug Classes to Avoid in Elderly PLWH

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<thead>
<tr>
<th>Drug class</th>
<th>Problems</th>
<th>Alternatives</th>
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<tbody>
<tr>
<td><strong>First generation antihistamines</strong>&lt;br&gt;e.g., Clemastine, Diphenhydramine, Doxylamine, Hydroxyzine</td>
<td>Strong anticholinergic properties, risk of impaired cognition, delirium, falls, peripheral anticholinergic adverse reactions (dry mouth, constipation, blurred vision, urinary retention).</td>
<td>Cetirizine&lt;br&gt;Desloratadine&lt;br&gt;Loratadine</td>
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<td><strong>Tricyclic antidepressants</strong>&lt;br&gt;e.g., Amitriptyline, Clomipramine, Doxepin, Imipramine, Trimipramine</td>
<td>Strong anticholinergic properties, risk of impaired cognition, delirium, falls, peripheral anticholinergic adverse reactions (dry mouth, constipation, blurred vision, urinary retention).</td>
<td>Citalopram&lt;br&gt;Escitalopram&lt;br&gt;Mirtazapine&lt;br&gt;Venlafaxine</td>
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<td><strong>Benzodiazepines</strong> Long and short acting benzodiazepines&lt;br&gt;e.g., Clonazepam, Diazepam, Midazolam</td>
<td>Elderly are more sensitive to their effect, risk of falls, fractures, delirium, cognitive impairment, drug dependency. Use with caution, at the lowest dose, and for a short duration.</td>
<td>Non-pharmacological treatment of sleep disturbance/sleep hygiene</td>
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<td><strong>Non-benzodiazepines hypnotics</strong>&lt;br&gt;e.g., Zolpidem, Zopiclone</td>
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<td><strong>Atypical antipsychotics</strong>&lt;br&gt;e.g., Clozapine, Olanzapine, Quetiapine</td>
<td>Anticholinergic adverse reactions, increased risk of stroke and mortality (all antipsychotics).</td>
<td>Aripiprazole&lt;br&gt;Ziprasidone</td>
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<td><strong>Urological spasmolytic agents</strong>&lt;br&gt;e.g., Oxybutynin, Solifenac, Tolterodine</td>
<td>Strong anticholinergic properties, risk of impaired cognition, delirium, falls, peripheral anticholinergic adverse reactions (dry mouth, constipation, blurred vision, urinary retention).</td>
<td>Non-pharmacological treatment (pelvic floor exercises)</td>
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<td><strong>Stimulant laxatives</strong>&lt;br&gt;e.g., Senna, Bisacodyl</td>
<td>Long-term use may cause bowel dysfunction.</td>
<td>Fibre&lt;br&gt;Hydration&lt;br&gt;Osmotic laxatives</td>
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<td><strong>Non-steroidal anti-inflammatory drugs (NSAIDs)</strong>&lt;br&gt;e.g., Diclofenac, Indomethacin, Ketorolac, Naproxen</td>
<td>Avoid regular, long-term use of NSAIDs due to risk of gastro-intestinal bleeding, renal failure, worsening of heart failure.</td>
<td>Paracetamol&lt;br&gt;Weak opioids</td>
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<td><strong>Cardiac glycosides</strong>&lt;br&gt;Digoxin (&gt;0.125 mg/day)</td>
<td>Avoid doses higher than 0.125 mg/day due to risk of toxicity.</td>
<td>Beta-blockers (for atrial fibrillation)</td>
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<td><strong>Long acting sulfonylureas</strong>&lt;br&gt;e.g., Glyburide, Chlorpropamide</td>
<td>Can cause severe prolonged hypoglycaemia.</td>
<td>Metformin or other antidiabetic classes</td>
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<td><strong>Cold medications</strong> Most of these products contain antihistamines (e.g., diphenhydramine) and decongestants (e.g., phenylephrine, pseudoephedrine)</td>
<td>First generation antihistamines can cause central and peripheral anticholinergic adverse reactions (as described above). Oral decongestants can increase blood pressure.</td>
<td>Avoid</td>
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Refer to Beers criteria for a more exhaustive list:

American Geriatrics Society 2019 updated AGS Beers Criteria for potentially inappropriate medication use in older adults.
### Common Prescribing Cascades to Avoid in Elderly PLWH

**Initial treatment**  | **Adverse drug reaction**  | **Subsequent treatment**  
---|---|---  
ACE inhibitors  | Cough  | Cough suppressant; antibiotic  
Amlodipine  | Edema  | Diuretics  
Antihypertensives  | Dizziness  | Prochlorperazine  
Antipsychotics  | Extrapyramidal effect  | Antiparkinsonian agents  
Beta-blockers  | Depression  | Antidepressants  
Cholinesterase inhibitors  | Incontinence  | Anticholinergics  
| Diarrhoea  | Bismuth subsalicylate  
| Rhinorrhoea  | Diphenhydramine  
Erythromycin  | Arrhythmia  | Antiarrhythmics  
Lithium  | Tremor  | Propranolol  
Meperidine  | Delirium  | Antipsychotics*  
Metoclopramide  | Extrapyramidal effect  | Antiparkinsonian agents  
NSAIDs  | Rise in blood pressure  | Antihypertensives  
Quinolone  | Delirium  | Antipsychotics*  
SSRI; SNRI  | Tremor  | Benzodiazepines  
Thiazide diuretics  | Hyperuricemia; gout  | Allopurinol; colchicine  
Tricyclic antidepressants  | Decreased cognition  | Antidepressants*  
| Constipation  | Laxatives  

* Subsequent treatment could result in a further prescribing cascade

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**References**


