

Prescribing cascades in older adults

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1 A prescribing cascade refers to the sequence of events in which an adverse drug event is misinterpreted as a new medical condition, leading to the addition of another, potentially avoidable, medication¹

For example, calcium channel blockers may cause ankle edema for which a diuretic may be prescribed. In a cohort study, this particular cascade occurred in 9.5% of older adults who were newly prescribed a calcium channel blocker (Appendix 1, available at www.cmaj.ca/lookup/doi/10.1503/cmaj.201564/tab-related-content).²

2 Serious adverse events can result in admission to hospital

In one case, a patient developed a cough after starting an angiotensin-converting-enzyme inhibitor. A cough syrup with guaifenesin and codeine was prescribed, leading to lethargy.³ Levofloxacin was started for presumed pneumonia, which led to diarrhea, followed by delirium and admission to hospital.

3 Cascades contribute to inappropriate polypharmacy, particularly in older adults

Patients with chronic conditions and geriatric syndromes that require complex drug regimens are at increased risk for problematic and inappropriate polypharmacy.⁴

4 Cascades can be identified and inappropriate polypharmacy prevented¹

Prescribers should ask themselves, “Is the patient reporting a symptom that could represent an adverse drug event?” and “Is a new drug being considered to address an adverse event that may relate to a previously prescribed drug therapy?” If the answer to either question is yes, prescribers should ask, “Could the initial drug be substituted for a safer alternative or could the dose be reduced, potentially eliminating the need for the subsequent drug therapy?” and “Does the patient need the initial drug therapy or could it be stopped?”

5 Consider deprescribing when a cascade is identified

Deprescribing is the process of tapering or stopping drugs that may not be indicated, according to patients’ priorities, to minimize polypharmacy and improve patient outcomes.⁵

References

1. Rochon PA, Gurwitz JH. The prescribing cascade revisited. *Lancet* 2017;389:1778-80.
2. Savage RD, Visentin JD, Bronskill SE, et al. Evaluation of a common prescribing cascade of calcium channel blockers and diuretics in older adults with hypertension. *JAMA Intern Med* 2020; 180:643-51.
3. Liu PT, Argento VS, Skudlarska BA. Prescribing cascade in an 80-year-old Japanese immigrant. *Geriatr Gerontol Int* 2009;9:402-4.
4. Duerden M, Avery T, Payne R. Polypharmacy and medicines optimization: making it safe and sound. London: The King’s Fund; 2013. Available: www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/polypharmacy-and-medicines-optimisation-kingsfund-nov13.pdf (accessed 2020 June 16).
5. Scott IA, Hilmer SN, Reeve E, et al. Reducing inappropriate polypharmacy: the process of deprescribing. *JAMA Intern Med* 2015; 175:827-34.

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