



DEPRESCRIBING IN ELDERLY PATIENTS WITH CHRONIC KIDNEY DISEASE

Polypharmacy is common among elderly patients with chronic kidney disease (CKD). Polypharmacy may be associated with nonadherence, inappropriately dosed medications, drug-drug, and drug-disease interactions, and increased morbidity and mortality. Although tools such as the American Geriatrics Society (AGS) Beers Criteria can be helpful in identifying medications associated with problems in elderly patients, guidance regarding deprescribing of these medications once identified, is lacking. This issue of *CLIPs* will discuss deprescribing of proton pump inhibitors; oral hypoglycemic agents; and statins. If you need further information, please contact the Center for Healthcare Innovation and Patient Outcomes Research (CHIPOR) at chipor@samford.edu.

Triantafylidis LK, Hawley CE, Perry LP, Paik JM. The role of deprescribing in older adults with chronic kidney disease. *Drugs and Aging*. 2018;35:973-984.

Introduction

- Chronic kidney disease (CKD) is defined as an estimated glomerular filtration rate (eGFR) less than 60 mL/min/1.73m² for greater than 3 months.
- Patients with CKD tend to have more complex medication regimens, multiple prescribers, and a higher risk of medication-related problems.
- Polypharmacy (defined as ≥ 5 medications) is also common in this population. In addition, this population is plagued with increased nonadherence.

Potentially inappropriate medications for patients with CKD

- In a recent study, approximately 45% of US veterans with kidney impairment received one or more drugs that were contraindicated or prescribed at an excessive dose. Similarly, 30% of non-veterans received inappropriate medications.
- The number of medications used was the strongest correlator to inappropriate renal prescribing.
- The risk increased more than 5 times for those patients taking ten or more medications compared with those taking 1-3 medications.

Deprescribing

- Deprescribing involves eliminating unnecessary and/or inappropriate medications. Typically, deprescribing is associated with improvement in patient satisfaction, decreased costs, and decreased healthcare utilization.
- Deprescribing can be conducted in a systematic way by completing five steps: reconcile all medications according to indication; assess the appropriateness of each medication considering the risks and benefits of use; assess each medication for eligibility to be discontinued; prioritize medications for discontinuation; and implement and monitor medication discontinuation.
- Discontinuation should be considered if the medication lacks an indication; results in a prescribing cascade that may be associated with harm; potential cause of harm; failure to control disease/symptom or disease/symptom has resolved; or preventative medication unlikely to confer benefit over patient's remaining lifespan; or unacceptable treatment burden.
- Deprescribing has been associated with decreased mortality, fewer nursing home admissions, reduced costs, and improvement in patients' perception of their global health.

Proton Pump Inhibitor (PPIs) deprescribing

- PPIs are one of the most commonly prescribed medications. Current estimates indicate that the prevalence of PPI use is 18.5% among community dwelling older adults in 2010-2011.
- Over 25% of hemodialysis patients taking PPIs, had no clear indication.
- Although many adverse effects of PPIs are benign, long-term use may be associated with significant adverse effects (i.e., progression of kidney disease, bone fracture, small intestinal bacterial overgrowth, *Clostridium difficile* infection, pneumonia, micronutrient deficiencies, and gastrointestinal malignancies).
- Patients receiving PPIs experienced a significantly higher risk of acute kidney injury risk (RR 1.44; 95% CI, 1.09-1.91) and CKD (RR, 1.36; 95% CI, 1.07 – 1.71) compared to non-PPI users.
- Recommendations for deprescribing include: reviewing the indication; weighing the risks vs. benefits of continued use; and consider deprescribing if clinically indicated.
- Deprescribing should be considered if one of the following criteria is met and the PPI should be tapered to avoid rebound symptoms of acid hypersecretion. The reduction should be by 50% in a 1-2 week interval.
- Lifestyle modifications are also recommended as tapering is conducted.

Oral hypoglycemic agents

- Approximately 40% of patients with diabetes will develop CKD, but CKD progression can be prevented with appropriate hemoglobin A1c goals.
- The AGS recommends a higher HbA1C target (8-9%) for older adults with comorbid conditions.
- Agents with glucose-dependent mechanism of action (e.g., metformin, DPP-4 inhibitors, SGLT-2 inhibitors and GLP-1 receptor agonists) are preferred in this population.

Statins

- Statins are the most commonly prescribed medications in community-dwelling older adults; however, the benefit use of statins in patients 75 years and older is conflicting.
- The KDIGO guidelines recommend statin therapy in all patients aged 50 years and older with CKD stages 3-5a who are not on hemodialysis and in patients aged 18-49 with CKD and known cardiovascular risk factors for coronary disease.
- Statin discontinuation may be necessary due to evidence that it may accelerate vascular calcifications through calcification of plaques and calcium accumulation in the arterial system.
- Therefore, an individual's life span needs to be taken into consideration before a recommendation is made about continuation.
- Discontinuation of statin therapy in patients with a limited life expectancy (estimated 12 months or less) did not affect survival.
- Statins may be beneficial in patients with CKD stages 3-4 due to a decrease in all-cause mortality in patients with CKD stage 3, but no benefit was observed for patients with a CKD stage 5 and on dialysis.

Conclusion

- Older adults with CKD have a higher medication burden and are at an increased risk of adverse events associated with polypharmacy.
- PPIs, statins, and oral hypoglycemic medications may be good targets for deprescribing in this patient population.
- Future research should center around the outcomes associated with older adults with CKD who complete deprescribing protocols.