

## Medications and Older Persons (January 2020)

### The Issue:

This Bulletin has been prepared for the benefit of CURAC members who are using prescribed medications. It encourages proactive medication management to help keep seniors healthy by using a preventative approach. We describe risk factors and current practices designed to avoid inappropriate prescription practices. While changing prescribing practices to reduce the use of potentially inappropriate medications is a complex health system problem, public awareness is key. This will be the case especially if national pharmacare comes to Canada. National pharmacare is expected to improve the health status of all persons and particularly the older cohort of our society, but not if they receive drugs they don't need. We also note that nonpharmacological strategies for controlling health challenges that are often treated with medication are underutilized, i.e., exercise, nutrition, counselling.

### The Problem:

Medication safety should be a health priority for seniors. A risky medication is a drug that may do more harm than good by causing harmful effects, including falls, fractures, memory problems, hospitalizations, kidney failure and mortality. There is reason to believe greater caution in the use of medications should be exercised.

The risky medications are identified in Beers criteria for potentially inappropriate medication use in older adults (1). The medications listed tend to cause side effects in seniors due to the physiologic changes of aging. It was estimated that drugs defined as potentially inappropriate for use by seniors were used to the extent they cost \$419 million (or \$75 per Canadian senior) in 2013, and nearly half of seniors had at least one claim for a drug on the Beers list in 2016 (2).

Additionally, when people take many medications it is highly unlikely that appropriately controlled trials have been done to examine whether people are better or worse off if a new drug is added to an existing set of medications (3). Polypharmacy is the use of multiple medications at the same time by one person. There are appropriate medication choices for the elderly patient with multiple chronic diseases. However, polypharmacy can be a potential problem if the medications (and over-the-counter remedies, alcohol, vitamins, herbs and other food supplements) interact to increase, decrease or cancel the positive or negative effects of different drugs. Research shows that adverse effects from medications occur in 58% of people using five medications (4).

### Medications and Our Aging Bodies:

The number of normally functioning cells in our organs decreases markedly as the body ages and chronic diseases impair organ function. Medications are absorbed, distributed throughout the body via the bloodstream, broken down in the liver, kidneys and other organs, and excreted primarily through the urine and feces. As we grow older, the dose of drugs should be reduced generally.

As we age, our body changes (5).

- The brain becomes more sensitive to drug effects. The effects of medications on the brain may also last longer.

- Some medications stay longer in our body because we have less muscle and more body fat. These changes may alter how drugs are distributed within the body.
- The liver becomes less efficient at eliminating some medications, as liver size decreases as we grow older. This may lead to increased interactions when taking multiple medications.
- The kidneys may remove medications from the body less efficiently, causing greater accumulation with chronic drug therapy.
- There are both sex changes and body composition changes that may affect where drugs are located in the body after a dose.

When types of medication are potentially inappropriate for older persons, alternative pharmacological or non-pharmacological therapies should be sought (6). When too many medications are taken, deprescribing is an underutilized solution. Deprescribing is a planned and supervised process of dose reduction or stopping the use of drugs that have a high risk:benefit ratio; they are not sufficiently beneficial when compared to the risk of causing harm. Deprescribing is most effective when healthcare providers reinforce the message during repeated visits.

The goals of the Canadian Deprescribing Network are to (7):

- Eliminate the use of risky medications for Canadian seniors
- Ensure access to safer drug and non-drug therapies

The Canadian Deprescribing Network provides pamphlets, articles and other resources for the public on their website, <https://www.deprescribingnetwork.ca/patients-and-public>. For the D-PRESCRIBE trial in Quebec, pharmacists sent an educational brochure to the patient and a pharmaceutical opinion to the physician and this resulted in a greater discontinuation of inappropriate prescriptions compared to usual care (8).

### **Drug Routines and Capabilities:**

Drug routines and capabilities are key elements in safe and effective use of prescription or over the counter medications at any age but particularly as we age.

- Organizational capabilities are needed to safely sustain daily or weekly dosage levels. Blister packs prepared by your pharmacist or dosettes prepared at home can help.
- Cognitive capabilities are needed to ensure that medications are taken on time. A partner or helper can prompt you to take medications at the right time and in the desired sequence.
- Mental capabilities are needed to choose non-prescription products that will not be harmful.
- Physical capabilities are needed to open and store pill containers and retrieve pills when needed.

A medication policy can alert funders of support services to include funds for professional services to enable older adults to set up daily routines and safety plans associated with medication management.

### **Success Stories:**

SaferMedsNL brought together patient advocates, community organizations, healthcare professionals and academic researchers, to improve medication use through deprescribing potentially harmful or unnecessary medications (9). As a province, Newfoundland and Labrador has a high rate of misusing potentially harmful medications, including antibiotics, sleeping pills, painkillers and medications used for heartburn and reflux.

SaferMedsNL personnel tour the province and engage in conversations with people in the communities to raise awareness and to empower people to ask their health-care provider if the medication they are using, or that of a loved one, is still needed.

In its analysis of safe and inappropriate medication practices, the SaferMedsNL initiative focused on proton pump inhibitors in year 1, benzodiazepines in year 2 and opioids in year 3 (10). Proton pump inhibitors, such as those used for heartburn, are commonly indicated for short-term use (11). Patients using benzodiazepines are at risk of daytime drowsiness, confusion, memory loss, depression, falls and fractures, and motor vehicle accidents, therefore seniors' use of these medications should be limited (12).

### **Challenges:**

Pharmacare is a system of health insurance coverage that provides people with access to necessary prescription drugs. Deprescribing superfluous drugs and avoiding unnecessary polypharmacy in the elderly are two issues that need to be addressed before benefits of a national pharmacare program would be realized (13).

Informed literate patients and their families could participate in drug therapy decisions if they know the questions to ask and how to find answers. Prescription drug information is usually embedded in the prescribers' Electronic Medical Record system, but these systems have a limited potential to identify clinically significant drug-drug interactions and considerable probability for triggering spurious alerts (14). Many Canadians do not have a family doctor so there may not be anyone who can advise and monitor their health over time.

Non-adherence to doctor's prescription recommendations is also a serious problem that should be monitored, with patients, their families, doctors and pharmacists working to ensure adherence.

### **Concluding Message:**

The greatest danger in inappropriate use of drugs, especially those that impair brain function, is the premature loss of independence, with reduction in ability to perform activities of daily living and the risk of institutionalization. The Beers criteria provides a generally effective strategy for reducing adverse drug events in the older patient population.

Grace Paterson, Chair, Health Care Policy Committee, CURAC-ARUCC ([grace.paterson@dal.ca](mailto:grace.paterson@dal.ca))  
(Committee members: Linda Kealey, UNB; Ken Craig, UBC; Don Dennie, Laurentian University; Michel Tousignant, UQAM; Daniel Sitar, UManitoba; Donna Meagher-Stewart, Dalhousie; Thomas Wilson, USASK)

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