

Medications in the Older Adult Drugs to avoid and safer alternatives.

By Barbara Kancelbaum

Problems related to medication are linked to hospital admissions and readmissions among older adults. The more drugs patients take, the greater their risk. However, it's not just the number of drugs but the types and the dosing that have an effect on older people.

Prescribing Cascade

"Many older people have multiple medical problems, for which they see different doctors and take different medications, which may have adverse interactions. Moreover, drugs that are used to treat one symptom can cause others, leading to a 'prescribing cascade' with dangerous repercussions,"



said Kellie L. Flood, MD, in the Division of Gerontology, Geriatrics, and Palliative Care at the University of Alabama at Birmingham (UAB) Hospital.

According to Flood, an example of a com-

mon prescribing cascade can occur when an older adult may take over-the-counter omeprazole for acid reflux, which can cause diarrhea as a side effect in some patients. When the patient seeks help for the loose stools, the physician may not be aware of the over-the-counter drug he is already taking for acid reflux and prescribe another drug to treat diarrhea - rather than remove the cause of the problem. The new medication for diarrhea may also have side effects, and the "prescribing cascade" of errors continues.

"Even appropriately dosed drugs can have effects that lead to more prescribing"

Flood said. "Instead, the medical practitioner should often reduce the dosage, discontinue the first drug or look for a better-tolerated medication."

On the List

Clinicians caring for older adults are becoming more aware that medications can have both positive and negative effects on their older patients, according to Marie Boltz, PhD, RN, GNP-BC, practice director of NICHE (Nurses Improving Care for Healthsystem Elders), based at the Hartford Institute for Geriatric Nursing at the NYU College of Nursing.

Boltz cited the Beers Criteria for Potentially Inappropriate Medication Use in Older Adults published in 1997 and updated in 2003 as the seminal text on the topic for clinicians.

"All medical practitioners who prescribe for older adults should be aware of the Beers

Criteria and make efforts to educate providers regarding optimal prescribing practices in older adults," Boltz said. "Many of the 300 hospitals engaged in the NICHE program use the Beers list in their educational programs, and it is frequently highlighted at conferences."

To keep physicians from prescribing inappropriate drugs for older adults, Flood spearheaded the development of educational alerts embedded in the hospital's computerized physician order entry (CPOE) system. In this new system, when a physician orders the targeted Beers medications in a patient age 65 and older, an educational alert appears on the CPOE and safer alternatives are listed. The new system targets, for example, sedating antihistamines (the most common being diphenhydramine), certain antiemetics (such as promethazine) and meperidine.

Since UAB began tracking outcomes of this system in May 2008, the number of older adults receiving these medications has been significantly reduced.

Chief Culprits

Among the most commonly used medications found on the Beers list is the antihistamine diphenhydramine (Benadryl), which is often used either as a sleep aid or to pre-medicate patients prior to blood transfusions, even when no prior history of transfusion reaction exists. Diphenhydramine is a common cause of confusion, hospital-acquired delirium and urinary retention in older people. When a patient manifests these side effects, they often are attributed to age-related changes or dementia rather than to the medication.

Another drug on the Beers list commonly used in the hospital setting is promethazine (Phenergan) to treat nausea and is commonly associated with confusion and sedation. Yet another serious offender is meperidine (Demerol), according to geriatrician David Dube, MD. "Demerol should be avoided at all costs," he said. The physician adviser for Complex Care and Aging Services at Crouse Hospital Syracuse, NY, Dube led a campaign to have the drug banned from use in older patients at Crouse.

"Demerol, used for postoperative pain and sedation for GI procedures, is metabolized slowly in the body," Dube said. "In older people, it can decrease cognitive abilities and decrease seizure thresholds. There are better tolerated, shorter-acting narcotic pain medications."

Special NICHE

At Crouse, the introduction of the NICHE program helped move the hospital toward safer prescription practices. There are now representatives of the NICHE Geriatric Resource Team on many hospital committees, including the pharmacy committee, and inappropriate medicines have been moved out of use.

According to Cindy Nigolian, GCNS-BC, clinical nurse manager for Complex and Aging Care Services and the NICHE coordinator at Crouse Hospital, the hospital's association with NICHE and connections to national NICHE experts and hospitals have allowed the Geriatric Resource Team to have a larger voice within the hospital to promote better use of medications. They have also made a priority of providing materials to increase patients' comfort, such as blanket warmers, noise-reduction systems and amplifiers for hearing, which can go a

long way to improving sleep and cognitive function. The hospital's 40 geriatric resource nurses, educated in the NICHE protocols that govern medication use, have changed the culture of the hospital - a change that is documented in patient satisfaction.

Nigolian credits Crouse CEO Paul Kronenberg, MD, for creating an elderly-friendly environment that makes rational medication use a priority for older adults throughout the hospital.

Other Risky Drugs for Seniors

Some drugs that may seem innocuous can pose a significant risk to older adults, Dube cautioned. His "cause célèbre" is sleep medicines. Heavily advertised to the public, they may seem to be a simple solution to sleep complaints, which are common in older adults. "People watch the television commercials and they don't remember the warnings; they just remember there's a drug to help them," he surmised.

Sleep medicines can cause retrograde amnesia, falls and confusion, said Dube, who acknowledged he did not focus fully on the risk of people getting up and eating in the middle of the night while taking these drugs until he saw his own relative do it. Moreover, he said it's very common for older people to develop a dependence on these medicines if they take them longer than the recommended 5-7 days.

Dube points to research showing harm is more likely than improvement in sleep for adults over age 60 who take sleep medications. (Glass, et al., 2005) As an alternative, his team developed a sleep order set without any standard sleep medications that targets pain control and other underlying causes of insomnia. When all non-medication

measures have failed, and the clinician feels compelled to resort to a drug for sleep complaints, Dube has had success with trazodone, which promotes sleep and has a favorable side-effect profile.

Meanwhile, many patients know relatively little about the dangers to older people that are posed by NSAIDs and aspirin in higher doses. These medications can impair the kidneys' ability to excrete salt, which can lead to pulmonary edema and congestive heart failure after just a minor injury. These problems are particularly acute for older patients with diabetes and heart disease. These drugs are the second most common cause of ulcers in all ages, Dube added, and aspirin and possibly other nonsteroidals may lead to earlier hearing loss.

Moreover, basic science on wounds shows these drugs impair bone healing and soft-tissue healing. Dube recommends prescribing acetaminophen before using ibuprofen, but no more than eight extra-strength acetaminophen in a day.

Reference

Glass, J., Lanctôt, K.L., Herrmann, N., et al. (2005). Sedative hypnotics in older people with insomnia: Meta-analysis of risks and benefits. *BMJ*, 331(7526), 1169.

Barbara Kancelbaum is a frequent contributor to ADVANCE.

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