WebinarPLUS+

ANTICOAGULANTS: LIFE-SAVING DRUGS THAT REQUIRE HYPERVIGILANCE

Age can complicate serious healthcare conditions exponentially, especially in long-term care settings. While the frail elderly already are a bleeding risk simply because of their advancing years, for example, their age also makes them a significant risk factor for the very conditions that powerful blood-thinning drugs are designed to treat.

Warfarin, one of the most widely used blood thinners, has been prescribed successfully for years. But the latest body of knowledge on anticoagulation therapy stresses that caregivers must remain aware of the myriad issues its improper use can cause.

Worse, the anticoagulant arsenal is swelling to include other meds, many of which are designed to treat specific conditions. While some are showing to be less risky, all remain a potential danger.

Tim Oser, RPh, a veteran Omnicare pharmacist now specializing in managing warfarin dosing, addressed anticoagulant therapy during a recent special *McKnight's* webinar sponsored by Omnicare, a CVS Health company.

"It's so important that we monitor these elderly patients and be an advocate to monitor not only their bleeding risk but also their clotting risk, their risk of stroke," said Oser, who also serves as a preceptor for Omnicare's pharmacy practical experience program, through which he has mentored more than 200 students. "Our senior population is so frail that these medications can cause harm."

Oser reminded that anticoagulant risks may be well-known but should never be understated.

Nearly 34,000 fatal, life-threatening or serious adverse drug events (ADEs) related to warfarin happen each year in nursing homes. More broadly, the drug class of anticoagulants is responsible for one-third of all ADEs and is the leading cause of ADEs leading to emergency department visits and hospitalizations after an ED visit.

Classifications and indications

Warfarin (also known as Coumadin) is part of a class of anticoagulants called Vitamin K antagonists. Other currently available anticoagulants are grouped into the following categories:

A SUPPLEMENT TO McKnight's LONG-TERM CARE NEWS
IN PARTNERSHIP WITH Omnicare® a CVSHealth company

• Heparins, which include unfractionated heparin, Lovenox (enoxaparin) and Fragmin (dalteparin)

• Direct oral anticoagulants, or DOACs. One class of DOACs — direct thrombin inhibitors — include the drugs Pradaxa (dabigatran) and Acova (argatroban). Another class of DOACs — Factor Xa inhibitors — include the drugs Xarelto (rivaroxaban), Eliquis (apixaban), Savaysa (edoxaban), Arixtra (fondaparinux) and Bevyxxa (betrixaban)

The major FDA-approved uses for available anticoagulants are:

- Coumadin, for treating atrial fibrillation (AF), deep vein thrombosis (DVT) prevention, DVT/ pulmonary embolism (PE) treatment and post myocardial infarction (MI)
- Pradaxa, Eliquis and Xarelto, for AF, DVT prevention, DVT/ PE treatment
- Savaysa, for treating AF and DVT/PE
- Bevyxxa, for DVT prevention
- Unfractionated heparin, or UFH, and Arixtra, for DVT prevention and DVT/PE treatment
- Low molecular weight heparin, or LMWH, for DVT prevention, DVT/PE treatment, post MI and unstable angina and non-Q-wave MI

"Only oral anticoagulants are FDA approved for use in atrial fibrillation patients for prevention of stroke or other thromboembolic events," Oser said, adding that unlike warfarin, newer anticoagulants are NOT approved for valvular atrial fibrillation — only non-valvular atrial fibrillation. While all can be used in one way or another for DVT treatment, most — but not all of them — can be used for DVT prevention.

Dosage dangers

Frail elderly in long-term care facilities are particularly susceptible because they have many factors that increase risk, Oser noted.

"I think it is important to realize just why warfarin can be so dangerous. Beyond the rapid changes in their health status, we know that missing a dose or changing their diet or adding just one medication to a stable regimen can have dramatic consequences," he explained. "In fact, with some interactions, the anticoagulant effects of warfarin can increase by over tenfold, in a matter of a few doses or days."

For these and other reasons, caregivers should closely heed instructions on warfarin dosing, which varies widely from a low of 0.5 mg to greater than 10 mg daily. In general, when starting someone on warfarin, start "slow and low," with an initial dose of 2 mg to 3 mg daily, and checking the INR (international normalized ratio) in three days.

That said, dosages for each resident on a warfarin regimen should be individualized as much as possible.

"When a dosage adjustment is necessary, it is important to realize that changes up or down should generally not be greater than ten percent from their current total weekly dose of warfarin," Oser said.

GOING WITH THE FLOW
Red blood cells, as depicted in the kind of blood vessel that anticoagulants work to keep open.

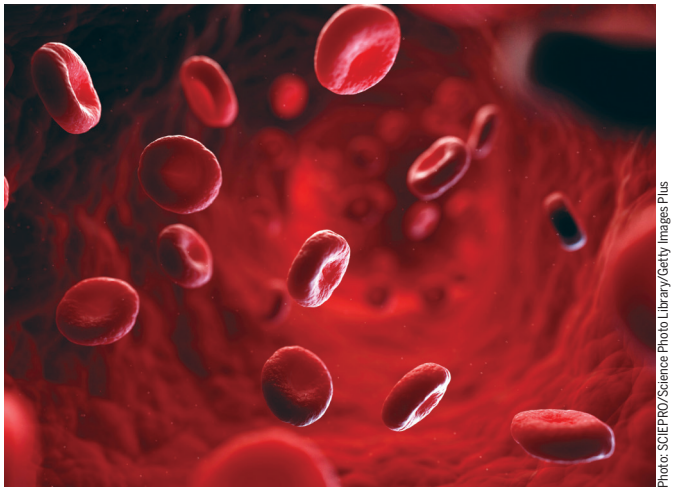

Photo: SCIEPRO/Science Photo Library/Getty Images Plus

Mixing mayhem?

Because so many nursing home residents take multiple medications and are highly susceptible to kidney disease, caregivers also should exercise extreme caution around warfarin drug interactions, which can include quick, exponential increases in anticoagulant effects. Moreover, new orders may require use of emergency or starter box medications prior to the pharmacy screening and dispensing the medication, making it necessary to be hypervigilant.

Antibiotics and anti-infectives are also known to cause serious warfarin interactions. Avelox, Bactrim, Biaxin, Cefotan, Chloromycetin, Cipro and Diflucan, can intensify the anticoagulation effects. Sulfonamides like Bactrim, fluoroquinolones like Levaquin, azole antifungals like Diflucan, and nitroimidazole derivatives like Flagyl may cause exponential increases in bleeding risk, even after only a few doses, which would necessitate 30% or more dose reductions, he added. (Omnicare has an Anticoagulation Safety Program and screening tool available on its Omniview site.)

Other kinds of medications that can lead to serious warfarin interactions include, but aren't limited to: aspirin and other antiplatelets, other anticoagulants, NSAIDs, amiodarone, corticosteroids, SSRIs/SNRIs and select nutraceuticals like garlic, gingko and ginger.

Certain kinds of foods also can lead to problems. Foods con-

"When a dosage adjustment is necessary ... changes up or down should generally not be greater than ten percent from the current total weekly dose of warfarin."
Tim Oser, RPh

For more information

The original webcast is available at www.mcknights.com/November13webinar.

taining Vitamin K may reduce or counter the effects of warfarin. Oser advised keeping the level of Vitamin K in seniors' diets at a constant level throughout therapy to avoid fluctuations.

DOACs: A viable alternative

When compared to Vitamin K agonists, DOACs are at least as effective as warfarin at preventing stroke, have fixed dosing, cause fewer drug and drug-food interactions and may cause less serious bleeding (except for an increased risk of GI bleeding), Oser said. However, DOAC dosing requires special care and attention regarding the resident's creatine levels and kidney function.

Lab monitoring is arguably simpler with DOACs as well.

"Although many may say that one advantage of the newer DOACs is that they don't require laboratory monitoring, that actually isn't true," Oser cautioned. "While all anticoagulants have some degree of necessary lab monitoring, the difference is patients on warfarin must have their anticoagulant status monitored, while the DOACs do not. Both DOACs and warfarin, meanwhile, require monitoring of a CBC at baseline and at least annually, as well as a serum creatinine at least every six months."

ID and mitigate risk factors

Bleeding risks are paramount considerations when administering, monitoring and caring for long-term care residents on anticoagulation therapy. Serious bleeding can be indicated by a number of things — from persistent nosebleeds and bruising, dark urine and stools, and anemia to coughing and vomiting blood and sudden consciousness changes.

In all cases, Oser advises caregivers to always contact the prescriber immediately if unusual bleeding is suspected.

"With everything, it's a balancing act."

Tim Oser, RPh

Caregivers also should educate themselves on the kinds of available reversal/sequestration agents. For example, the DOAC Praxbind uses a humanized monoclonal antibody, while Vitamin K can be used to neutralize warfarin. Another proactive measure is weight-based and renally adjusted dosing.

Caregivers should be cognizant of risk factors that include anemia, a history of GI bleeding, frequent falls, recent surgery, alcohol intake, and kidney or liver disease, among others. There's also the concomitant use of medications, including antiplatelets like aspirin and clopidogrel, NSAIDs and oral corticosteroids.

Oser also strongly urged caregivers to play close attention to the "boxed warnings" FDA requires on anticoagulants. All anticoagulants except for unfractionated heparin now have boxed warnings in their FDA approved labeling. Warfarin's boxed warning highlights the general bleeding risk associated with its use, "but that doesn't mean that bleeding isn't a concern for all of these drugs," he added. "The low molecular weight heparins and the direct oral anticoagulants also have boxed warnings discussing the risk of spinal/epidural hematoma."

When selecting anticoagulant therapy, a number of clinical considerations should be carefully noted, including Abnormally low weight, Bleeding risk, Creatinine clearance, Drug interactions and advanced Elderly age — a mnemonic that goes by the term "ABCDE."

To aid in evaluating anticoagulant candidates, several tools have come into use. One is the so-called "CHA2DS2VASc" scoring system. The tool uses a maximum nine-point scoring system that looks at the most relevant risk factors for stroke, and gives higher weighting to both age greater than or equal to 75, as well as history of stroke, TIA or other thromboembolic event.

Another, the "HAS BLED," has a maximum score of eight and helps caregivers determine who is at the greatest risk of bleeding with use of anticoagulant therapy.

Safe-use strategies

Oser reminded participants that nearly a third of all warfarin ADEs are deemed preventable today.

While caregivers can go far in understanding the specific indications for each anticoagulant — knowing how other drugs, even food, can seriously interact, and monitoring the bleeding risks for residents — there are other important strategies for improving their safe use.

Much of it is proactive. Prevent or minimize fall risks and be mindful of upcoming appointments with doctors and dentists. Other measures include monitoring for any unusual or abrupt changes in diet or physical condition, the start/stop dates of other meds, and increasing lab monitoring in high-risk situations.

Extreme attention

Oser advised clinicians and caregivers to be ever vigilant of even the most subtle changes or signs around bleeding risks when dealing with anticoagulants.

"We must never forget that older persons with complex underlying conditions are at risk for bleeding and in fact, the burden and risk are exponentially higher for seniors," he said.

"One thing everyone should report immediately is any change in cognitive state," he added. "A confused state, for example, often accompanies a potential bleeding or clotting issue. Be ever mindful of their INR status, and with DOACs in particular, ensure the resident is consistently taking those meds on a day-to-day basis. [Otherwise, it] leaves them at risk of clotting and bleeding.

"With everything," he concluded, "it's a balancing act." ■

Editor's note

This McKnight's Webinar Plus supplement is based on a similarly named webinar presented on November 13. The event was sponsored by Omnicare. The full presentation is available at www.mcknights.com/November13webinar.