

Long-Term Care Survey Alert

Case Study: These Efforts Can Help Protect Residents From Kidney Damage

LTC medical director explains adverse drug event detection system.

The Veterans Affairs Pittsburgh Healthcare System (VAPHS) "recently revised its list of medications for detection of drug-induced acute kidney injury (AKI)," reports **Steve Handler, MD, PhD, CMD**, a long-term care medical director there.

"The problem is keeping up with the knowledge base of medications that are potentially nephrotoxic," Handler adds. "To develop and maintain the list ... requires a multidisciplinary team of physicians and pharmacists." You then have to apply the list of medications "to real laboratory and medication data, which can be accomplished through the development of clinical decision support systems," Handler explains. "These systems can detect AKI much more efficiently than manual chart review -- and can [result in] better medication monitoring and prescribing."

Examples of drugs that can cause AKI include non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen, and cardiovascular agents like diuretics, Handler says.

Resource: To review a list of nephrotoxic medications and related information, visit <http://www.fpnotebook.com/renal/pharm/NphrtxcDrgs.htm>.

Handler also reports that the VAPHS currently has funding from the federal Agency for Healthcare Research and Quality to "help determine the impact of drug-induced AKI. We have an adverse drug event detection system that uses the ... RIFLE criteria to detect AKI."

The RIFLE criteria are as follows, says Handler (Crit Care 2004; 8:R204-12):

"a. Risk - 1.5-fold increase in the serum creatinine

b. Injury - Two-fold increase in the serum creatinine

c. Failure - Three-fold increase in the serum creatinine OR ≥ 0.5 mg/dl serum creatinine to ≥ 4.0 mg/dl. SCr ≥ 4.0 mg/dl and acute rise in SCr of ≥ 0.5 mg/dl."

"Our hypothesis is that earlier detection of AKI (i.e., when someone presents with 'risk') can lead to fewer patients who will develop [renal] injury or failure," Handler explains. "If you catch [AKI] early enough, most drugs can be stopped in time to prevent irreversible damage."

Clinical tips: Albert Barber, PharmD, CPG, says that he attempts to "avoid non-steroidals in people over 65 or in diabetics of any age, as diabetics tend to have nephropathy, which leads to renal failure. So you don't want to give them any drug that can worsen renal function -- and virtually all NSAIDs do that to some extent," adds Barber, consulting pharmacist with Clinical Rx Consulting in Stow, Ohio. "The worst one was Vioxx, which is off the market, but the other fairly potent one is Celebrex. If I am going to use Celebrex in an elderly patient, I'll never use more than 100 mg [twice a day] or even 100 mg a day. That class of drugs really has the most cardiorenal effects. The other concern with that class of drugs is gastrointestinal bleeds, which in a lot of older patients will be painless and can go undetected for weeks."