Preventing Acetaminophen Overdoses

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According to several studies, an overwhelming majority of patients who developed liver toxicity while taking acetaminophen were receiving more than 4 g of the drug daily.1–4 As a consequence of this widespread adverse effect, it is imperative that pharmacists keep track of each patient’s total daily dose. However, this might not be easy to do, because most organizations maintain floor stock supplies of the drug and some physicians seem unaware of the hazard of prescribing multiple acetaminophen-containing products for “as-needed” use. Yet according to the Food and Drug Administration’s MedWatch database, among 307 unintentional overdoses leading to hepatotoxicity between 1998 and 2001, 25% of patients were taking more than one acetaminophen-containing product!

After interviewing 27 elderly patients and examining their prescription bottles, a pharmacist observed a striking trend: pharmacy labels for prescription drugs containing acetaminophen, such as acetaminophen/hydrocodone (Vicodin, Abbott) and acetaminophen/proxyphene (Darvocet, aaiPharma/Xanodyne), were not making it obvious that the tablets contained acetaminophen or how much. For example, one label stated “generic for Darvocet” and another “propox/APAP 100/65”—the zero in 650 mg was omitted because of space limitations.

Most of the patients were taking over-the-counter products containing acetaminophen and were also consuming this agent in prescription medications, unaware that they might be exceeding the recommended limit of 4 g per day.

One study has indicated that liver toxicity from acetaminophen poisoning is the most common cause of acute liver failure in the U.S.5 Among people who have taken an unintentional overdose of this drug, 38% had taken two or more acetaminophen-containing products simultaneously and 63% took compounds containing a narcotic such as acetaminophen/oxycodone (Percocet, Endo) or Vicodin.

It is clear that counseling patients about the dangers of using too much acetaminophen is important in community practice. Many community pharmacies even label acetaminophen-containing prescriptions with special warnings against combining the drug with any other type of acetaminophen product. However, it is not uncommon for hospitalized patients to have multiple active orders for acetaminophen—for example, plain acetaminophen as well as other combination drug products for fever and pain that also contain the drug.

One hospital printed retrospective usage reports from its automated dispensing cabinets each morning for all patients whose intake had exceeded 3 g of acetaminophen within the previous 24 hours. The hospital staff was dismayed to learn that one patient had unintentionally received 8 g within a 24-hour period and that others had received as much as 6 g on consecutive days! The hospital’s review detected an average of one patient per day whose intake of acetaminophen had exceeded the 4 g limitation. One common denominator was the use of combination oral analgesics containing 500 mg of acetaminophen plus hydrocodone. Because most orders are still handwritten or preprinted, prescribers rarely receive a computerized reminder about the potential for duplication of a drug.

Pharmacists in this hospital had been printing a cautionary note on all acetaminophen products on the medication administration record stating: “Do not exceed 4 grams within a 24-hour period.” The P&T committee monitored the drug’s usage and then sent a message to the medical staff about the problem.

Obviously, this precaution alone is not effective. Instead, constant oversight is required to gain a clear picture of the extent of acetaminophen use, and managers should elicit the active involvement of the medical staff to correct problems if they exist.

What is your facility doing to identify and prevent acetaminophen overdoses?

REFERENCES


The reports described in this column were received through the USP–ISMP Medication Errors Reporting Program (MERP). Errors, close calls, or hazardous conditions may be reported on the ISMP (www.ismp.org) or the USP (www.usp.org) Web site or communicated directly to ISMP by calling 1-800-FAIL SAFE or via e-mail at ismpinfo@ismp.org.