Transdermal Medications and Heat Sources Are a Bad Match

Figure 1. Embossed print is nearly impossible to decipher. (Image provided courtesy of the Institute for Safe Medication Practices.)

While hospitalized, a woman with multiple myeloma was placed on transdermal fentaNYL (DURAGESIC) 25 mcg per hour for back pain management. The patient had previously suffered two vertebral compression fractures. During the first two weeks at home, things went well. But soon thereafter, a family member noticed that the patient seemed disoriented, was losing her balance, and had nausea and vomiting. A thorough investigation was conducted, and it was discovered that the fentaNYL patch was being applied to the patient's back. At the same time, the patient routinely sat in her favorite recliner which vibrates and has a heating component which was activated.

As mentioned in product labeling, it's important to remind patients and caregivers to avoid exposing transdermal fentaNYL and other transdermal medication patches to heat from heating pads, electric blankets, heat or tanning lamps, sun bathing, hot baths, saunas, hot tubs, heat wraps, and heated water beds, as this could increase the rate of drug delivery. Also, avoid tight coverings over the patch and strenuous exercise, which can heat the body. The person who reported this wanted us to remind others that heated loungers and even vehicles with heated seats can affect absorption of medication when exposed to these heat sources for more than a short time. Encourage patients to apply the patch to appropriate body areas that won't come into contact with these heat sources.

ANOTHER EXPIRATION DATE SITUATION

Add yet another problem with the way expiration dates appear on drug products. The NITRO-DUR (nitroglycerin) patch from Key Pharmaceuticals (Figure 1) embosses the lot number and expiration date over a corrugated area that seals the protective paper outerwrap. Unfortunately, this makes the date nearly impossible to read and the numbers 3 and 5 difficult to distinguish. An illegible expiration date on a nitroglycerin patch can result in negative outcomes for patients.

The Institute for Safe Medication Practices has asked the Food and Drug Administration and the US Pharmacopeia Convention to assure that manufacturers use specific expiration date formats that express dates in a uniform sequence to clearly communicate the date in a consistent and unambiguous manner. Manufacturers should also avoid packaging features that might interfere with legibility (such as printing on shiny foil or corrugated areas).

A POINT ABOUT LEVOTHYROXINE

After reviewing transfer orders from a hospital, a nursing care facility physician ordered SYNTHROID (levothyroxine) 0.25 mg for a patient. The long-term care pharmacy confused mg and mcg and dispensed levothyroxine 25 mcg—a 10-fold underdose. This is not the first time we have heard about errors confusing mg and mcg with these products. In our May 2003 newsletter we reported that errors had become so common with levothyroxine that one pharmacist told us that he had set up his computers to signal an alert whenever a 0.25 mg dose was entered. When the warning appeared, the correct dose almost always was 0.025 mg or 25 mcg. Clinicians need to be alerted to the risks associated with dosing this product and have pharmacists or nurses at community, ambulatory, or long-term care sites provide feedback directly to prescribers if a dosing error, especially an overdose, is suspected. To avoid decimal points and dose conversions, health care practitioners should express the dose of levothyroxine in the same way most manufacturers express the dose—in mcg, not mg. ■

This article is from the Institute for Safe Medication Practices (ISMP). The reports described were received through the USP–ISMP Medication Errors Reporting Program. Errors, near misses, or hazardous conditions may be reported on the ISMP website at www.ismp.org. ISMP can be reached at 215-947-7797 or ismpinfo@ismp.org.