

ISMP Medication Error Report Analysis

Risk of Cutting Certain Medication Patches

Warfarin by Generic Name

Why Doctors Must Include Medication Purpose on Prescriptions

Carac-Kuric Mix-Ups

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These medication errors have occurred in health care facilities at least once. They will happen again—perhaps where you work. Through education and alertness of personnel and procedural safeguards, they can be avoided. You should consider publishing accounts of errors in your newsletters and/or presenting them at your inservice training programs.

Your assistance is required to continue this feature. The reports described here were received through the United States Pharmacopeia (USP) Medication Errors Reporting Program (MERP), which is presented in cooperation with the Institute for Safe Medication Practices (ISMP). If you have encountered medication errors and would like to report them, you may call USP toll-free, 24 hours a day, at 800-233-7767 (800-23-ERROR).

Any reports published by ISMP will be anonymous. Comments are also invited; the writers' names will be published if desired. ISMP may be contacted at the address shown below.

Errors, close calls, or hazardous conditions may be reported through the ISMP (www.ismp.org) or USP (www.usp.org) Web sites or communicated directly to ISMP by calling 800-FAIL-SAFE or via e-mail at ismpinfo@ismp.org. ISMP guarantees the confidentiality and security of the information received and respects reporters' wishes as to the level of detail included in publications.

of 25 mcg/h patches. The patient in this case suffered no adverse effects. However, serious harm, including fatality, has been reported under similar circumstances in which patients have cut and applied a reservoir membrane fentaNYL patch to their skin, intending to reduce the dose but instead delivering an overdose.

In the United States, several transdermal drug delivery systems exist for various products¹:

- *Reservoir membrane–modulated systems.* The drug is contained in a reservoir between an impermeable backing layer and a rate-controlling microporous membrane. Drug release is controlled by the membrane. Cutting the patch makes the entire dose available immediately.
- *Microreservoir systems.* The drug is contained in multiple, smaller drug reservoirs. Cutting the patch destroys some of the reservoirs (most may remain intact), although the number of reservoirs that remain may not be proportionate to the surface

RISK OF CUTTING CERTAIN MEDICATION PATCHES

A physician instructed staff from a hospice health care agency to cut a 50 mcg/h fentaNYL transdermal system patch and then apply the cut patch to a patient to

deliver a 25 mcg/h dose. Soon thereafter, a visiting nurse discovered the cut patch and immediately removed it. The nurse then called the agency to notify the physician about the risk of an overdose with this practice and to order a supply

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area of the patch. Thus, cutting a patch in half does not guarantee that each half contains equivalent amounts of the product.

- **Drug-in-adhesive layer systems.** The drug is homogeneously mixed with a polymer-based adhesive, which is applied to an impermeable backing. The amount of drug delivered is diffusion controlled and directly proportionate to the surface area of the patch. Cutting the patch decreases the amount of drug delivered without presenting a hazard. (*Lidoderm* [lidocaine] patches fall into this category and can be cut safely to the desired size to deliver a smaller dose than the full patch.)
- **Matrix systems.** The drug is evenly distributed throughout a drug-in-adhesive matrix similar to that of the drug-in-adhesive layer system. Like the drug-in-adhesive system, the amount of available drug is directly proportionate to the surface area of the patch. Cutting the patch is possible, but this may decrease the efficacy of the adhesive.

Most fentaNYL patches are available in a reservoir membrane-modulated system. Product labeling clearly notes that these patches should never be cut or altered before application. A fentaNYL transdermal matrix system patch is also available (Mylan, Inc.), and more similar products will be offered soon in the United States. However, labeling for this product specifically warns users to not divide, cut, or damage the patches before application. No formal studies have been done that determine the clinical effectiveness of cut fentaNYL matrix patches. Thus, no type of fentaNYL transdermal patch should ever be cut to titrate doses. Instead, prescribers

should provide patients with new prescriptions for lower-strength patches. Patients should be warned about the risks associated with cutting patches and instructed to properly dispose of higher-strength patches if lower-strength patches have been prescribed. For other products offered via a transdermal system, always refer to the package insert and follow the manufacturer's recommendations regarding the safety and efficacy of cutting patches.

WARFARIN BY GENERIC NAME

There is potential for confusion between the branded warfarin product *Jantoven*, *Januvia* (sitaGLIPTin), and *Janumet* (sitaGLIPTin and metFORMIN). Also as dangerous, if not more so, is that some health care professionals and patients may not recognize that *Jantoven* is a brand of warfarin, easily leading patients to taking 2 warfarin products together.

A case was reported to the Institute for Safe Medication Practices in which a patient took warfarin that was prescribed and dispensed under both names, which resulted in an international normalized ratio of 9.7. On a discharge medication reconciliation form, warfarin was identified as a medication the patient had been receiving at home and that was continued while the patient was hospitalized. The physician checked "continue home warfarin" and wrote a new prescription based on the inpatient warfarin order. The community pharmacy dispensed *Jantoven*; however, the pharmacist did not discuss the nature of the drug with the patient and did not ask any questions that might have determined that the patient

already had warfarin at home.

Branding by manufacturers of long-established products such as warfarin (*Coumadin*), a high-alert medication, increases the potential for dangerous confusion. When branded generics are dispensed to patients, it is important that the generic name be listed on the prescription container label, along with the brand name (as necessary), whether *Jantoven* or *Coumadin*. Presently, many community pharmacies simply list the brand name for branded products, but that will not help a patient identify duplicate medications.

The error described here also was caused by failure to provide appropriate discharge counseling. Patient education should be an integral component of discharge reconciliation, regardless of which health care professional provides the service.

WHY DOCTORS MUST INCLUDE MEDICATION PURPOSE ON PRESCRIPTIONS

Many health care professionals may wonder why doctors need to include purpose on prescriptions. See Figure 1 for an example of why this guideline is important. The prescriber in this case confused hydralazine with hydroxyzine. Because the purpose of the prescription was included, the pharmacist immediately recognized the error and had the order changed to hydroxyzine.

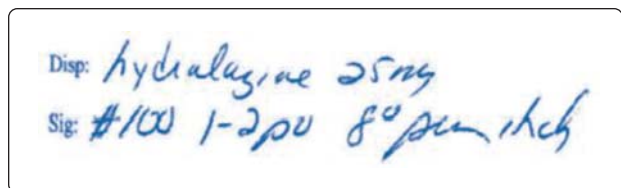


Figure 1. Notice anything wrong with this prescription?

CARAC-KURIC MIX-UPS

Sanofi-aventis recently sent a letter to pharmacists regarding the risk of mix-ups between its *Carac* (fluorouracil) cream (0.5%) (used for the topical treatment of multiple actinic or solar keratoses of the face and anterior scalp) and Altana's *Kuric* (ketoconazole) cream (2%) (used for the topical treatment of fungal infections and seborrheic dermatitis).² The letter provides details about a dispensing error caused by an improperly transcribed verbal order for *Kuric*,

which was misheard as *Carac* and dispensed to a patient. Following the dispensing error, the patient developed a severe rash with erythema, irritation, peeling of the skin, and secondary infection involving the application site and surrounding areas.

Sanofi-aventis suggests precautions for preventing this mix-up, including clarifying oral and written orders, verifying the brand and generic names, spelling the product name when reading back oral orders, matching the product's indication to the patient's condi-

tion, and drawing attention to the differences in the names of these products. To view the letter, visit www.ismp.org/docs/CaracLetter20080110.pdf.

REFERENCES

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2. Green D, Rullo B. Immediate attention required: dispensing alert error: Carac (fluorouracil) cream, 0.5% and Kuric (ketoconazole) cream, 2% [letter]. www.ismp.org/docs/CaracLetter20080110.pdf. Accessed November 24, 2008. ■