

Generic name confusion

X A 19-year-old patient who ordinarily takes olanzapine is given 250 mg of clozapine in error. He begins to show signs of neuroleptic malignant syndrome and his blood pressure drops to 84/27mm Hg.

What happened? The generic, or nonproprietary, names for the products were confused. The way drug products are given their generic names may have helped cause the confusion.

The Food & Drug Administration requires that either the established (official) name or, in the absence of an official name, the common or usual name appears on labels and labeling of a drug product. This name, loosely referred to as the *generic name*, must accompany the proprietary (brand) name if there is one.

Names become established and are recognized as official when they are published (monographed) in the *USP (United States Pharmacopeia)*. Most generic names originate from nonproprietary names for drug substances—names that are entirely in the public domain. These nonproprietary names are reviewed for acceptability by the United States Adopted Name (USAN) Council, whose expertise is recognized by the FDA.

The nonproprietary names are coined using an established stem, or group of letters, that represents a specific drug class. Examples of USAN stems include prefixes, e.g., “cef-” (for cephalosporins); infixes, e.g., “-erg-” (for ergot alkaloid derivatives); and suffixes, e.g., “-dopa” (for dopamine receptor agonists). Often, the nonproprietary name for

a drug substance has its origins in the drug’s chemistry, e.g., methyl-, hydroxy-, chlor-, etc.

Names that include USAN stems, chemistry roots, or any other coded information are easier to remember, and give clues about what a drug is used for. However, the names may sound or look so much alike that they contribute to medication errors (see

amiodarone, prompted the USP and USAN Council to change the drug name amrinone to inamrinone. The generic drug industry has also responded to requests from the FDA to use a mixture of upper- and lowercase letters to highlight differences in similar nonproprietary names, (e.g., vinBLAStine/vin-CRISStine). The National Coordinating Council for Medication Error Reporting & Prevention (www.NCCMERP.org) recommendations encourage doctors to use both brand and generic names when prescribing.

Here are some suggestions for avoiding generic name confusion:

- Clarify orders.
- Ask for the intended indication of use for the drug.
- Ask for spelling of the drug on verbal orders.

- Call to clarify an unclear order.
- Ask for both brand and generic names.
- Differentiate the drug names of potential SA/LA drugs in pharmacy stock.
- Use a highlighter or pen to circle problem drug pairs.
- Add a sticker or paper sleeve to the container.
- Separate the stock of similar names on pharmacy shelves.
- Study USAN stems and problematic drug pairs.

It is better to learn from someone else’s mistake than your own. Read about medication errors made by other healthcare practitioners. The Institute for Safe Medication Practices’ Web site and FDA’s Med Error Page provide examples of generic name confusion errors.

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Examples of sound-alike and look-alike nonproprietary name pairs involved in errors

Names with common chemistry roots	Names with common USAN stems	Other sound-alike/look-alike non-proprietary names
Acetazolamide	Valacyclovir	Anakinra
Acetahexamide	Valganciclovir	Amikacin
Chlorpromazine	Azithromycin	Prednisone
Chlorpropamide	Erythromycin	Primidone
Dopamine	Nifedipine	Metoclopramide
Dobutamine	Nicardipine	Metolazone
Hydrocodone	Doxorubicin	Vecuronium
Hydrocortisone	Daunorubicin	Vancomycin

table above)—especially if the products share common dosage forms, similar packaging and labeling, strengths, or dosing regimens. Most generic drug products do not have proprietary names and are especially vulnerable to confusion. Also, physicians may prescribe using the generic drug name even when a generic product is unavailable.

This generic name confusion has impelled regulatory action and pharmacy practice recommendations. For example, reports of serious outcome, including deaths resulting from medication errors involving the name pair amrinone/

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To report a problem with an FDA-regulated product, please call 1-800-FDA-1088.