

Look-Alike/Sound-Alike Drug Names: Can We Do Better in Canada?

Look-alike/sound-alike drug names are a serious problem in health care, accounting for 29% of medication dispensing errors¹. As well, name confusion is a causative factor in 15-25% of medication errors overall.^{1,2} Illegible handwriting, incomplete knowledge of drug names, new products and similarities in packaging and labelling act as contributing factors to this problem. The thousands of brand name and generic drugs currently marketed, combined with new drugs released annually, make every health care provider vulnerable to involvement in this type of error.² The United States Food and Drug Administration (FDA) rejects approximately one-third of proposed names for new products. Despite of this, over 600 pairs of look-alike/sound-alike drug names have been reported.^{2,3} This is far too many for busy practitioners, whether they are prescribing, dispensing or administering medications!²

Medication errors involving look-alike/sound-alike drug name mix-up can cause serious patient harm.¹ It is often difficult to detect the error, as the dispensed medication is presumed to have been prescribed for the patient. A number of errors have been reported and published in the ISMP Medication Safety Alert! newsletters on the mix-up between Lamisil® and Lamictal®.^{4,5,6} The US Food and Drug Administration (FDA), as well as Health Canada, has noted that these two drugs, side by side, would be easily distinguished from one another by the tall-man lettering technique. Indeed, GlaxoSmithKline, which manufactures and markets Lamictal®, undertook this label

change for improvement in the United States more than two years ago, as shown in Figure 1.

ISMP Canada recently received a sentinel report that is strongly suspected to have been the result of a look-alike/sound-alike medication error involving Lamisil® and Lamictal®. A hospitalized geriatric patient was prescribed Lamisil® 250 mg daily for 3 months to treat a fungal nail bed infection. The order was entered by a pharmacy technician into the pharmacy computer system as lamotrigine and verified by a pharmacist. It was filled by a second technician and checked by a second pharmacist as an individual prescription before it was delivered to the nursing unit. The nurse who administered the first dose of lamotrigine (Lamictal®) did not discover the error when checking the drug label against the medication administration record. In this case, all the drug distribution and administration processes failed to detect the order entry error.

The medication was administered to the patient for three weeks until a physician questioned why the patient was receiving an antiepileptic drug. At the time the error was discovered, no apparent harm to the patient had occurred. The patient and family were informed of the error and they decided not to proceed with the antifungal treatment. Four days after the lamotrigine was discontinued, the patient developed a very severe total body rash with swelling of the face. The usual starting dose of lamotrigine is 25 mg, and the patient had been taking ten times this dose for three weeks. Serious dermatologic reactions due to lamotrigine, including Stevens-Johnson syndrome and toxic epidermal necrolysis (Lyell's syndrome), have been reported to Health Canada and are listed in the product monograph^{7,8}. Although most reactions resolved after discontinuation of the drug, death has occurred rarely. Failure to carefully titrate lamotrigine doses has been associated with an increased incidence of these serious reactions.⁷ While it is strongly suspected the skin rash was related to the lamotrigine, the patient was also taking an antibiotic which is also known to cause severe skin rash.

Some of the identified contributing factors include:

- Lamisil® (terbinafine) is a non-formulary drug in the hospital. The pharmacy and nursing staff were not familiar with the drug.
- The look-up of the drug item in the pharmacy computer system was defaulted to generic name. The only available choices were lamotrigine and lamivudine.
- Lamisil was correctly transcribed onto the medication administration record (MAR) on the nursing unit when the drug was ordered. However, the nurse administering



Figure 1. Label of Lamictal® marketed in the US

the first dose of the medication failed to notice that the medication label did not match the MAR entry.

- The hospital uses a 24-hour computerized MAR. A new MAR printed daily from the pharmacy medication profile displayed only lamotrigine. Once the computerized MAR was checked against the first handwritten entry, checking subsequent new MAR's against the MAR from the previous day would not help the nurse to detect any discrepancy.
- The hospital did not have a unit-dose distribution system, which might have provided opportunities to detect the high dose of lamotrigine at each cart fill.
- Although the mix-up in this case did not directly result from a drug selection error at the time of dispensing, the lack of drug name differentiation on the bulk bottles, the prescription label, as well as the computer look-up of these drugs did not provide any warning flags for the healthcare practitioners involved.

The following recommendations are suggested for implementation:

- Use tall-man lettering to distinguish look-alike/sound-alike drug names on manufacturer's bulk bottle labelling, prescription labels, medication administration records and in hospital and community pharmacy computer systems (e.g., LamiCTAL and LamiSIL). See Figure 2 for suggested label enhancement.

LamiCTAL and Lami**SIL**

Figure 2. Tall-man lettering example

- Ensure that both generic and brand names appear in Pharmacy order entry systems.
- Include the indication for the medication on the prescription, i.e., Lamisil® for fungal infection; Lamictal® for epilepsy/seizures.⁶

References:

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3. Massachusetts Coalition for the Prevention of Medical Errors. Safety First Alert. January 2001.
4. ISMP Medication Safety Alert! Volume 1, Issue 17, August 28, 1996.
5. ISMP Medication Safety Alert! Volume 3, Issue 12, June 17, 1998.
6. ISMP Medication Safety Alert! Volume 6, Issue 21, October 17, 2001.
7. Lamictal product monograph. Canadian Pharmacists Association. Compendium of Pharmaceutical Specialties. 2003.
8. Health Canada. Summary of Reported Adverse Drug Reactions Suspected Drug: Lamotrigine: skin and appendages disorders (Jan 1/98-Dec 31/03) February 25, 2003.
9. ISMP Canada Safety Bulletin, Volume 1, Issue 1, December 2001

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ISMP Canada is a national voluntary medication incident and 'near miss' reporting program founded for the purpose of sharing the learning experiences from medication errors. Implementation of preventative strategies and system safeguards to decrease the risk for error-induced injury and thereby promote medication safety in healthcare is our collaborative goal.

To report a medication error to ISMP Canada: (i) visit our website www.ismp-canada.org or (ii) email us at info@ismp-canada.org or (iii) phone us at 416-480-4099. ISMP Canada guarantees confidentiality and security of information received. ISMP Canada respects the wishes of the reporter as to the level of detail to be included in our publications.

- Label unit dose packages, individual prescription containers and MAR's with the generic drug name followed by the brand name in parentheses for potentially confusing drug names or where the brand name is more familiar.
- Use warning flags next to drug names (generic and brand) in the computerized drug database to alert for potential mix-up in drug selection.
- Provide information and education for pharmacy and nursing staff when non-formulary drugs are used, especially regarding dosing issues and side effects.
- Develop and enforce procedures for nurses to check the patient's first dose of a medication against the original physician's order.
- Consider implementation of unit-dose drug distribution.
- Flag non-formulary orders for pharmacist review prior to dispensing during the verification process.
- Provide and improve clinical pharmacy activities including closer monitoring of drug therapy for new drug orders.

ISMP Canada has informed Health Canada about this serious medication error. The concern about the potential for mix-up of these two drugs has also been forwarded to both GlaxoSmithKline Inc. and Novartis Pharmaceuticals Canada Inc. ISMP Canada has formally requested a change in labelling to better distinguish the two drug names. Both companies have responded and are considering making these changes. A similar request will be communicated to the generic drug manufacturers that produce and market these drugs in Canada.

ISMP Canada previously published a Safety Bulletin on the mix-up of lamotrigine (Lamictal®) and other similar look-alike and sound-alike drug names. For more details on these issues and other recommendations, please refer to the December 2001 issue of the ISMP Canada Safety Bulletin.⁹