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List of *TALLman Lettering for Look-Alike, Sound-Alike Drug Names in Canada* included in this safety bulletin

Upcoming Webinar (Tuesday, January 12, 2016): *TALLman Lettering for Look-Alike, Sound-Alike Drug Names in Canada*

Application of TALLman Lettering for Selected High-Alert Drugs in Canada

TALLman lettering is a method of applying upper-case lettering to sections of look-alike, sound-alike (LASA) drug names to bring attention to their points of dissimilarity.[1] By accentuating the points of difference, the application of TALLman lettering to a drug name may alert healthcare providers that the drug name in question can be confused with another drug name. Several studies have provided evidence that highlighting sections of drug names with TALLman lettering helps to distinguish similar names,[2-4] making mix-ups less likely. Although no published studies have demonstrated the effectiveness of TALLman lettering in reducing errors associated with drug name confusion in healthcare practice, this method provides a simple and straightforward approach to distinguishing words that look similar. As a result, it has become an accepted differentiation strategy for LASA drug names in healthcare settings.[5-7] TALLman lettering is only one of several risk-mitigation strategies that can be used to differentiate LASA drug name pairs.[8-10] For example, enhanced use of technology such as automated identification (e.g., bar codes) offers advanced medication system safeguards.

Background

TALLman lettering may be effective because it draws attention to drug names presented in this format,[4,11] and can act as a warning. TALLman lettering may also assist with name recognition and comprehension by affecting the reader's eye movements.[2] Its use does not rely on characteristics of type, e.g., font or size. It can be used in any electronic system that accommodates lowercase and uppercase text options. However, overuse of the technique may reduce its effectiveness,[7] as names may cease to appear novel. Therefore, the use of TALLman lettering should be limited to drug name pairs associated with significant risk to patient safety. TALLman lettering will have the greatest impact on the differentiation of LASA drug names if the approach to capitalization is applied consistently.

In the United States, the Institute for Safe Medication Practices (ISMP) and the Food and Drug Administration (FDA) have done leading work on the topic of TALLman lettering.[12] Other members of the international safety community have also embraced this approach.[13-16] The International Medication Safety Network is leading collaborative work to acknowledge and build upon these efforts to enhance global consistency, minimize confusion, and facilitate implementation of consistent TALLman lettering among stakeholders, including pharmaceutical companies.

ISMP Canada and the Canadian Association of Provincial Cancer Agencies have published a list of TALLman lettering in 2010 for select oncology

drugs.[1] Previous collaborative work has also led to the Canadian uptake of recommended TALLman lettering for the drug name HYDROmorphone to prevent mix-ups with morphine.[17] In 2015, a working group was formed to identify TALLman lettering for the top high-alert LASA drug name pairs of concern to Canadian practitioners. This project, similar to previous international work, focused on confusable nonproprietary (generic) drug names. Development of the Canadian TALLman list for LASA drug names is further described below.

Key Project Milestones

The project began with aggregate analyses of reported incidents from databases maintained by the Institute for Safe Medication Practices Canada and the Canadian Institute for Health Information.*†[18] The analyses and a Canada-wide survey of healthcare practitioners identified numerous drug name pairs that have the potential to cause harm or that have already caused harm through a substitution error.

A systematic risk assessment was then completed to identify which of the drug name pairs would benefit most from the application of TALLman lettering as a differentiation strategy. This assessment examined orthographic (look-alike) and phonetic (sound-alike) similarities, clinical risk of confusability (e.g., similar dosing, availability in similar dosage forms, similar routes of administration, use for similar indications or in similar clinical settings), and potential or actual risk of harm should the 2 drugs be confused.

The confusable sections of the drug name pairs were identified and TALLman lettering was proposed, with consideration of psycholinguistic factors, published international TALLman lists,[1,12-14,16] results from the survey of Canadian practitioners, and recognized methods or approaches for applying TALLman lettering (e.g., CD3 rule[12] or Mid-TALLman[13]). When direct application of these TALLman lettering approaches made the 2 names appear more similar to each other or to a drug name outside the identified pair, subjective expert opinion of the perception of similarity was considered. Feedback on the proposed TALLman lettering for high-alert drug name pairs was obtained from members of the project working group and expert panel, the International Medication Safety Network, and Canadian practitioner survey participants.

The resulting list of "TALLman Lettering for Look-Alike/Sound-Alike Drug Names in Canada" is included in this bulletin (see page 3). ISMP Canada encourages the use of this list when TALLman lettering is chosen as a strategy for drug name differentiation. Consistency across the Canadian healthcare continuum, from manufacturers to end-users, is a key consideration. Principles for the Application of TALLman Lettering in Canada were developed and are available at www.ismp-canada.org/download/TALLman/Principles_for_the_Application_of_TALLman_Lettering_in_Canada.pdf. The full project report will be available on November 20, 2015 at www.ismp-canada.org/download/TALLman/TALLman_Report.pdf.

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References are available at:
http://www.ismp-canada.org/download/safetyBulletins/2015/ISMPCSB2015-10_TALLmanReferences.pdf

* The National System for Incident Reporting (NSIR) is a database provided by the Canadian Institute for Health Information and is a component of the Canadian Medication Incident Reporting and Prevention System (CMIRPS) program. More information about the NSIR is available from: http://www.cmirps-scdpim.ca/?p=12

† Disclaimer: Although the analyses described in this bulletin were based on data provided by the Canadian Institute for Health Information, the opinions expressed are those of ISMP Canada only.

TALLman Lettering

for Look-Alike/Sound-Alike Drug Names in Canada

LASA Drug Names with Recommended TALLman Lettering	TALLman Lettering Source
AFAtinib / aXitinib	ISMP Canada
amLODIPine / amiodarone*	ISMP (US)
azaCITIDine / azaTHIOprine	ISMP (US)
azaTHIOprine / azithromycin*	ISMP (US)
CARBOplatin / CISplatin	ISMP (US)
cycloSERINE / cycloSPORINE	FDA
cyclophosphamide*	CAPCA/ISMP Canada
daBRAFenib / daSATinib	ISMP Canada
DACTINomycin / daptomycin*	ISMP (US)
DAUNOrubicin / DOXOrubicin	FDA
dexamethasone / dexmedeTOMidine	ISMP Canada
dilTIAZem / diazepam*	ISMP Canada
dimenhyDRINATE / diphenhydrAMINE	FDA
DOBUTamine / DOPamine	FDA
DOCEtaxel / PACLitaxel	CAPCA/ISMP Canada
DOXOrubicin / IDArubicin	ISMP (US)
epinephrine* / ePHEDrine	ISMP (US)
epirubicin* / eriBULin	ISMP Canada
fentanyl* / SUFentanil	ISMP (US)
HYDROmorphone / morphine	ISMP (US)
hydroxyzine* / hydroxyUREA	ISMP Canada
iBRUtinib / iMAtinib	ISMP Canada
inFLIXimab / riTUXimab	ISMP (US)
lamiVUDine / lamoTRIgine	ISMP (US)
mitoXANTRONE	FDA
niLOtinib / niLUTAmide	ISMP Canada
oBINutuzumab / oFAtumumab	ISMP Canada
PANitumumab / PERTuzumab	ISMP Canada
quiNIDine / quiNINE	ISMP (US)
sAXagliptin / sitagliptin*	ISMP Canada
SORAfenib / SUNItinib	CAPCA/ISMP Canada
vanDETanib / vemURAFenib	ISMP Canada
vinBLAStine / vinCRIStine	FDA

*TALLman lettering is not applied to this drug name in Canada at this time

ISMP Canada
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ISMP (US)
Institute for Safe Medication Practices (US)

FDA
US Food and Drug Administration

CAPCA
Canadian Association of Provincial Cancer Agencies

Download:
www.ismp-canada.org/download/TALLman/TALLman_lettering.pdf

Endorsed by the International Medication Safety Network

Webinar: *TALLman Lettering for Look-Alike, Sound-Alike Drug Names in Canada*

Tuesday, January 12, 2016
12 noon to 1 pm ET

ISMP Canada will be hosting a webinar for healthcare professionals and the pharmaceutical industry. The webinar will outline the methodology of the Canadian approach to TALLman and discuss selected principles that were applied in the development of the TALLman list for use in Canada.

Health Canada Communication Regarding Outdated Labelling of Vincristine Injection

Health Canada recently issued a Dear Healthcare Professional Letter regarding the presence of outdated safety information on the inner and outer labels, as well as the package insert, of certain lots of 2 vincristine products manufactured by Hospira.[1] The labels and insert contain missing critical information regarding the route of vincristine administration. **Vincristine is only to be administered via the intravenous route—administration via any other route can result in a fatal outcome for the patient.**

Administration of vincristine via any route except intravenously is a 'pharmaceutical never event' identified in the recent publication of Never Events for Hospital Care in Canada.[2] Never events are patient safety incidents that result in serious patient harm or death, and can be prevented by using organizational checks and balances. Preliminary findings from the ISMP International Medication Safety Self Assessment (MSSA) for Oncology identified opportunities for improvements.[3] Several recommendations to prevent errors with vincristine are found in this MSSA available at: https://mssa.ismp-canada.org/oncology/page/12

The full Health Canada risk communication can be found on the Health Canada website at: http://healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2015/55558a-eng.php

References

1. Vincristine sulfate injection USP 1 mg/mL – incorrect labelling. Ottawa (ON): Health Canada; 2015 Oct 23 [cited 2015 Oct 26]. Available from: http://healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2015/55558a-eng.php
2. Never Events for Hospital Care in Canada. Canadian Patient Safety Institute and Health Quality Ontario; 2015 Sept [cited 2015 Oct 25]. Available from: http://www.hqontario.ca/Portals/0/documents/about/report-never-events-hospital-care-en.pdf
3. Preliminary Results from the International Medication Safety Self Assessment for Oncology. ISMP Canada Saf Bull 2013 [cited 2015 Oct 27];13(6):1-5. Available from: http://ismp-canada.org/download/safetyBulletins/2013/ISMPCSB2013-06_International_MSSA_Oncology.pdf

Preventing Medication Errors with New High-Concentration Insulins

Until very recently, all insulin products for human use in Canada were available in only one concentration: 100 units/mL. In 2015, Health Canada authorized 2 new high-concentration insulin products: Toujeo SoloSTAR (insulin glargine) 300 units/mL prefilled pen[1] and Humalog (insulin lispro) 200 units/mL KwikPen prefilled pen.[2] These concentrated formulations of insulin provide convenient dosing volumes for patients with high insulin requirements, although Toujeo is not restricted to this population. The new products are available only in pen format, which addresses a number of concerns that were identified when U-500 (500 units/mL) insulin was introduced in the United States.[3] However, despite this design enhancement, the introduction of any new product into an established line of similar medications introduces the potential for new medication errors to occur.

Figure 1. Toujeo SoloSTAR (insulin glargine 300 units/mL; top) and Humalog (insulin lispro 200 units/mL; bottom) KwikPen. Pictures are provided courtesy of Sanofi Aventis Canada Inc. and Eli Lilly Canada Inc., respectively.

Dosing Considerations

- Toujeo is not bioequivalent to insulin glargine 100 units/mL (Lantus) and the 2 products are not directly interchangeable.[1] Specifically, Toujeo achieves steady state more slowly than Lantus.[1] This difference may be due to a smaller precipitate depot that is formed from the smaller volume of Toujeo injected (compared to Lantus for administration of the same dose).[4]
- When a patient's therapy is being converted from Lantus to Toujeo, the initial dose of Toujeo is the same as the existing Lantus dose, but a higher daily Toujeo dose may be required to achieve glycemic targets.[1]
- Dosing for the Humalog 200 units/mL product and the original Humalog 100 units/mL insulin lispro is equivalent and dose conversion is not required.[5,6]

Recommendations

Physician Prescribing and Physician/Pharmacy Order Entry

- To ensure that the correct product is dispensed and/or administered when a concentrated insulin product is prescribed, indicate both the brand and generic names of the desired product, as well as the concentration and the dose in units (not as "U" and not using measures of volume).
- Work with order-entry system vendors and system administrators to clearly distinguish the concentrated product in selection screens (e.g., ***200 units/mL***) and to display both the generic and brand names for Toujeo and Lantus.

Administration

- Administer concentrated insulin only with the supplied pen device. Do not attempt to use a syringe to remove insulin from the cartridge for administration in any other manner. Administering concentrated insulin in other ways puts patients at risk of hypoglycemia due to overdose (because insulin syringes are not designed for use with high-concentration insulins[1,3,7]) and infectious diseases associated with multipatient use. [7,8]
- Given the higher concentration of insulin in these products, ensure that the pens are correctly primed so that the desired dose is delivered every time.[1,7]

Availability and Storage

- Consider reserving the use of concentrated insulins for patients who require more than a defined daily dose or those already using these products at home (as determined by the Pharmacy and Therapeutics or similar committee).

- Segregate high-concentration insulins from the standard U-100 insulin products, and use warning labels (such as "concentrated insulin") to reduce the likelihood of mix-ups.
- Instruct patients to dispose of all discontinued pens so that incorrect insulin is not inadvertently administered. This is especially important for patients who are visually impaired and may not be able differentiate between new and old pens.

Conclusion

Insulin is a high-alert drug, and a variety of safeguards are needed to address vulnerabilities with its use. Understanding the similarities and differences between older and newer insulins and their delivery devices is part of a broad, systems-based approach to mitigating harm.

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References are available at:
http://www.ismp-canada.org/download/safetyBulletins/2015/ISMPCSB2015-10_TALLmanReferences.pdf

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The Canadian Medication Incident Reporting and Prevention System (CMIRPS) is a collaborative pan-Canadian program of Health Canada, the Canadian Institute for Health Information (CIHI), the Institute for Safe Medication Practices Canada (ISMP Canada) and the Canadian Patient Safety Institute (CPSI). The goal of CMIRPS is to reduce and prevent harmful medication incidents in Canada.

HIROC

The Healthcare Insurance Reciprocal of Canada (HIROC) provides support for the bulletin and is a member owned expert provider of professional and general liability coverage and risk management support.

ISMP CANADA

The Institute for Safe Medication Practices Canada (ISMP Canada) is an independent national not-for-profit organization committed to the advancement of medication safety in all healthcare settings. ISMP Canada's mandate includes analyzing medication incidents, making recommendations for the prevention of harmful medication incidents, and facilitating quality improvement initiatives.

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