

Application of TALLman Lettering for Drugs Used in Oncology

Canadian practitioners have requested guidance about look-alike/sound-alike drug names. In the United States, the Institute for Safe Medication Practices (ISMP) and the Food and Drug Administration (FDA) have done leading work in the area of TALLman lettering.¹⁻³ In the United Kingdom, the National Patient Safety Agency has found this approach can be useful for dealing with potential confusion between drug names.⁴ The Canadian Association of Provincial Cancer Agencies (CAPCA) and ISMP Canada have recognized that oncology drugs form a priority subset of medications with potentially confusable names. This bulletin provides the recommended TALLman lettering to be applied to problematic drug name pairs used in oncology.

TALLman Lettering

TALLman lettering is a method used to assist in the differentiation of look-alike/sound-alike drug names through the application of UPPER CASE lettering to certain sections of drug names. TALLman lettering has typically been applied to syllables or groups of letters within drug names to bring attention to the points of dissimilarity between confusable names.

The concept of TALLman lettering was tested and formally described in 2004 by Filik et al.⁵ and suggested as a method of distinguishing between drug names by the National Coordinating Council for Medication Error Reporting and Prevention⁶ and by Berman.⁷

Joint Initiative on TALLman Lettering for Drugs Used in Oncology

A working group of stakeholders from CAPCA, CancerCare Manitoba, and Alberta Health Services-Cancer Care and ISMP Canada convened in January 2010 to identify the look-alike/sound-alike drug name pairs of concern in Canada and to determine how they could be differentiated with TALLman lettering.

The project included a published literature review of incidents involving oncology drugs with look-alike/sound-alike names. It also included a review of provincial initiatives: CancerCare Manitoba had implemented TALLman lettering for selected drug names; Cancer Care Ontario had published guidelines on chemotherapy labelling, which included the recommendation to use

TALLman lettering where similarity of drug names is problematic⁸; and Alberta Health Services-Cancer Care was beginning its review of drug names with a view to developing a method of differentiation.

A fundamental step in this project was a Canada-wide survey of oncology practitioners to determine which look-alike/sound-alike drug name pairs were considered to have the potential to cause harm (or had already caused harm) due to a mix-up. Fifty-one responses were received from provincial cancer agencies or provincial centres (representing consolidated input from pharmacy, nursing, and medical staff) and from individual oncology practitioners. The responses confirmed some previously reported problematic name pairs and revealed name pairs that had not previously been reported. In many cases, respondents reported groups of more than 2 drugs with problematic look-alike/sound-alike names. Importantly, this survey facilitated a review of drug names in oncology practice that Canadian practitioners felt posed the greatest concern. The problematic drug names were categorized into 9 groups (Table 1).

In preparation for the application of TALLman lettering to distinguish name pairs, input was obtained from a human factors engineer (on issues related to legibility, syllable breakdown, and potential caveats) and from a psycholinguist (regarding possibilities for the precise placement of TALLman lettering). The groups of problematic look-alike/sound-alike drug names were then reviewed and the confusable components of their names identified on a pairwise basis. Confusable name pairs reported by ISMP (US)^{1,2} and the FDA³ were compared with the Canadian survey results. Recommendations for TALLman lettering put forward by these organizations were reviewed and adopted for Canada as applicable. For 3 pairs of drug names, no TALLman lettering solution had appeared in the literature: docetaxel / paclitaxel; sorafenib / sunitinib; and cyclophosphamide / cyclosporine.

These 3 new name pairs were analyzed with a multistrategy approach, including consideration of human factors elements, look-alike/sound-alike components of the names (with input from the psycholinguist), legibility, and typeface. The process also included a review of the TALLman lettering to be recommended, within the context of existing TALLman lettering recommendations for drugs, to

Table 1: Responses to a Canadian Survey About Look-alike/Sound-alike Oncology Drug Names of Concern

Group No.*	Potentially Confusable Names	No. of Respondents [†]
1	vinblastine / vincristine / vinorelbine	34
2	carboplatin / cisplatin / oxaliplatin	22
3	docetaxel / paclitaxel	21
	paclitaxel / nab-paclitaxel	9
4	dasatinib / imatinib / nilotinib / erlotinib / lapatinib / gefitinib	19
	sorafenib / sunitinib	8
5	daunorubicin / doxorubicin	18
	doxorubicin / epirubicin	16
	doxorubicin / pegylated doxorubicin / liposomal doxorubicin	7
6	bevacizumab / bortezomib / cetuximab / infliximab / rituximab	14
7	mitomycin / mitoxantrone / mitotane	12
8	cycloserine / cyclosporine / cyclophosphamide	10
Other [‡]	dimenhydrinate / diphenhydramine	10

*Respondents frequently identified groups of more than 2 drugs with problematic look-alike/sound-alike names.

[†]A total of 51 responses were received from provincial cancer agencies or provincial centres (representing consolidated input from pharmacy, nursing, and medical staff) and individual oncology practitioners.

[‡] Dimenhydrinate and diphenhydramine are used in the oncology setting.

avoid new look-alike/sound-alike problems. The project was also aligned with international work through a decision to focus on confusable *generic* drug names.

The proposed solutions for use of TALLman lettering for the 3 new target name pairs were sent for feedback to the project working group and to the International Medication Safety Network (<http://www.intmedsafe.net>); 27 responses were received.

Recommendations for TALLman Lettering for Drugs Used in Oncology

Table 2 lists the TALLman lettering recommendations for look-alike/sound-alike drug names in oncology, jointly endorsed by CAPCA and ISMP Canada for use in Canada. This table is also presented in a convenient 1-page format for posting and sharing among healthcare practitioners. These recommendations and the process used for determining them were endorsed by the International Medication Safety Network at its September 2010

meeting. Because generic drug names are used worldwide and because efforts to ensure coordination are critical for standardization and coordination of medication safety efforts around the globe, it was important that the recommendations from this project be aligned with international work.

Drug names must be read and differentiated at all stages in the medication-use process, whether manual or automated: purchasing, storage, prescribing, dispensing, transcribing, administration, and monitoring. Consequently, the application of TALLman lettering to aid in differentiation can be considered for each of these stages. The application of TALLman lettering is one of several techniques and stratagems to optimize medication safety for drugs used in oncology. This project adds to the list of published recommendations for standardizing the application of TALLman lettering for look-alike/sound-alike oncology drug names and fulfills a need identified by oncology practitioners across Canada.

The full project report is available from:

http://www.ismp-canada.org/download/miscpub/ISMPCanada-CAPCA_Oncology_Drug_Safety_Project-2010Nov.pdf

TALLman Lettering for Drugs used in Oncology

Look-Alike/Sound-Alike Drug Names with Recommended TALLman Lettering	Source
vinBLAS ^t ine / vinCRIS ^t ine	FDA
CARBO ^o platin / CIS ^o platin	ISMP (US)
DOCE ^e taxel / PAC ^e Litaxel	CAPCA / ISMP Canada
SORA ^a fenib / SUNI ⁱ tinib	CAPCA / ISMP Canada
DAUNO ^o rubicin / DOXO ^o rubicin	FDA
DOXO ^o rubicin / IDA ^o rubicin	ISMP (US)
inFLIX ⁱ mab / riTUX ⁱ mab	ISMP (US)
mitoXAN ^o TRONE	FDA
cycloSER ⁱ NE / cycloSPOR ⁱ NE	FDA
cyclophosphamide*	CAPCA / ISMP Canada
dimenhyDRIN ^A TE / diphenhydrAM ^I NE	FDA

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*TALLman lettering is not recommended at this time.

CAPCA = Canadian Association of Provincial Cancer Agencies, FDA = Food and Drug Administration (US),
ISMP (US) = Institute for Safe Medication Practices (US), ISMP Canada = Institute for Safe Medication Practices Canada.

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Endorsed by CAPCA, ISMP Canada, and the International Medication Safety Network

Table 2: Recommended TALLman Lettering for Oncology Drug Names of Concern

Group No.	Recommendation	Source for Recommendation
1	vinBLAS ^t ine / vinCRIS ^t ine	FDA
2	CARBO ^o platin / CIS ^o platin	ISMP (US)
3	DOCE^taxel / PAC^Litaxel	CAPCA / ISMP Canada
4	SORA^fenib / SUNI^tinib	CAPCA / ISMP Canada
5	DAUNO ^r ubicin / DOXO ^r ubicin	FDA
	DOXO ^r ubicin / IDA ^r ubicin	ISMP (US)
6	inFLIX ⁱ mab / riTUX ⁱ mab	ISMP (US)
7	mitoXAN ^T RONE	FDA
8	cycloSER ^I NE / cycloSPOR ^I NE	FDA
	cyclophosphamide*	CAPCA / ISMP Canada
Other	dimenhyDRINATE / diphenhydrAMINE	FDA

*TALLman lettering is not recommended at this time.

CAPCA = Canadian Association of Provincial Cancer Agencies, FDA = Food and Drug Administration (US), ISMP (US) = Institute for Safe Medication Practices (US), ISMP Canada = Institute for Safe Medication Practices Canada.

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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.

Medication Incidents (including near misses) can be reported to ISMP Canada:

(i) through the website: http://www.ismp-canada.org/err_report.htm or (ii) by phone: 416-733-3131 or toll free: 1-866-544-7672.

ISMP Canada can also be contacted by e-mail: cmirps@ismp-canada.org. ISMP Canada guarantees confidentiality and security of information received, and respects the wishes of the reporter as to the level of detail to be included in publications.

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