

5 CONCLUSIONS

The Proprietary Name Risk Assessment findings indicate that the name, Treanda with the expanded indication of use and dose, is not vulnerable to name confusion that could lead to medication errors. As such, we do not object to the use of the proprietary name, Treanda with this new indication of use and dose.

The Label and Labeling Risk Assessment findings indicate that the presentation of information of the proposed container labels introduces vulnerability to confusion that could lead to medication errors. We believe the risks identified can be addressed and mitigated prior to drug approval, and provide recommendations in Section 6 that aim at reducing the risk of medication errors.

6 RECOMMENDATIONS

6.1 COMMENTS TO THE DIVISION

6.1.1 Proprietary name:

The Division of Medication Error Prevention has no objections to the use of the proprietary name Treanda with this new indication of use and dose.

6.1.2 Container Label and Insert Labeling:

Based upon our assessment of the labels and labeling, the Division of Medication Error Prevention has identified areas of needed improvement. We have provided recommendations in section 6.2 and note that these recommendations were discussed with the Applicant on October 22, 2008. We acknowledge that the sponsor intends to incorporate the label and labeling recommendations discussed during the October 22, 2008 teleconference. However, we have also included the agreed upon comments below.

6.1.2.1 Container Label

Relocate the 'Discard unused portion,' statement so that it is presented in conjunction with the 'Single Use Vial' statement to ensure that any product that is left over from use is discarded.

6.1.2.2 Carton Labeling

Relocate the 'Discard unused portion,' statement so that it is presented in conjunction with the 'Single Use Vial' statement to ensure that any product that is left over from use is discarded. This should be located on the principal display panel.

On the side panel, remove the statement 'immediately dilute the required dose of reconstituted solution with the appropriate diluent for intravenous infusion' and replace it with the more abbreviated statement, 'Requires immediate further dilution, see package insert for instructions. Currently, the side panel of the carton is cluttered and difficult to read. The reconstitution and dilution instructions are too close to one another and may be confusing to practitioners when they refer to this panel for instruction. This information is presented in a manner that may be confusing to practitioners when they refer to this panel for instruction.

6.1.2.3 Package Insert Labeling

Increase the prominence of the infusion rates (i.e. 30 minutes and 60 minutes) in order to emphasize the differing infusion rates between the two indications. Treanda was approved with the chronic lymphocytic leukemia indication with a recommended dose of 100 mg/m² to be infused over 30 minutes. The new indication of indolent B-cell non-Hodgkin's Lymphoma requires a dose of 120 mg/m² infused over 60 minutes. Because healthcare practitioners have become accustomed to the infusion rate of the previous indication, we anticipate errors between the two different rates.

We would like healthcare practitioners to be made aware of the major difference between the two Treanda indications. Therefore, at the time of product launch, DMEPA recommends that the applicant inform healthcare practitioners about the differences in the infusion rates of Treanda (e.g., Dear Healthcare Professional letter).

7 REFERENCES

1. *Micromedex Integrated Index (<http://weblern/>)*

Contains a variety of databases covering pharmacology, therapeutics, toxicology and diagnostics.

2. *Phonetic and Orthographic Computer Analysis (POCA)*

As part of the name similarity assessment, proposed names are evaluated via a phonetic/orthographic algorithm. The proposed proprietary name is converted into its phonemic representation before it runs through the phonetic algorithm. Likewise, an orthographic algorithm exists which operates in a similar fashion. This is a database which was created for The Division of Medication Error Prevention, FDA.

3. *Drug Facts and Comparisons, online version, St. Louis, MO (<http://weblern/>)*

Drug Facts and Comparisons is a compendium organized by therapeutic Course; contains monographs on prescription and OTC drugs, with charts comparing similar products.

4. *AMF Decision Support System [DSS]*

DSS is a government database used to track individual submissions and assignments in review divisions.

5. *Division of Medication Errors and Prevention proprietary name consultation requests*

This is a list of proposed and pending names that is generated by the Division from the Access database/tracking system.

6. *Drugs@FDA (<http://www.accessdata.fda.gov/scripts/cder/drugsatfda/index.cfm>)*

Drugs@FDA contains most of the drug products approved since 1939. The majority of labels, approval letters, reviews, and other information are available for drug products approved from 1998 to the present. Drugs@FDA contains official information about FDA approved brand name and generic drugs and therapeutic biological products; prescription and over-the-counter human drugs and therapeutic biologicals, discontinued drugs and "Chemical Type 6" approvals.

7. *Electronic online version of the FDA Orange Book*
(<http://www.fda.gov/cder/ob/default.htm>)

Provides a compilation of approved drug products with therapeutic equivalence evaluations.

8. *United States Patent and Trademark Office* <http://www.uspto.gov>.

Provides information regarding patent and trademarks.

9. *Clinical Pharmacology Online* (<http://weblern/>)

Contains full monographs for the most common drugs in clinical use, plus mini monographs covering investigational, less common, combination, nutraceutical and nutritional products. Provides a keyword search engine.

10. *Data provided by Thomson & Thomson's SAEGIS™ Online Service, available at* www.thomson-thomson.com

The Pharma In-Use Search database contains over 400,000 unique pharmaceutical trademarks and tradenames that are used in about 50 countries worldwide. The data is provided under license by IMS HEALTH.

11. *Natural Medicines Comprehensive Databases* (<http://weblern/>)

Contains up-to-date clinical data on the natural medicines, herbal medicines, and dietary supplements used in the western world.

12. *Stat!Ref* (<http://weblern/>)

Contains full-text information from approximately 30 texts. Includes tables and references. Among the database titles are: Handbook of Adverse Drug Interactions, Rudolphs Pediatrics, Basic Clinical Pharmacology and Dictionary of Medical Acronyms Abbreviations.

13. *USAN Stems* (<http://www.ama-assn.org/ama/pub/category/4782.html>)

List contains all the recognized USAN stems.

14. *Red Book Pharmacy's Fundamental Reference*

Contains prices and product information for prescription, over-the-counter drugs, medical devices, and accessories.

15. *Lexi-Comp* (www.pharmacist.com)

A web-based searchable version of the Drug Information Handbook.

16. *Medical Abbreviations Book*

Contains commonly used medical abbreviations and their definitions.

APPENDICES

Appendix A:

The Medication error staff considers the spelling of the name, pronunciation of the name when spoken, and appearance of the name when scripted. We also compare the spelling of the proposed proprietary name with the proprietary and established name of existing and proposed drug products because similarly spelled names may have greater likelihood to sound similar to one another when spoken or look similar to one another when scripted. The Medication error staff also examines the orthographic appearance of the proposed name using a number of different handwriting samples. Handwritten communication of drug names has a long-standing association with drug name confusion. Handwriting can cause similarly *and* dissimilarly spelled drug name pairs to appear very similar to one another and the similar appearance of drug names when scripted has lead to medication errors. The Medication error staff apply their expertise gained from root-cause analysis of such medication errors to identify sources of ambiguity within the name that could be introduced when scripting (e.g., “T” may look like “F,” lower case ‘a’ looks like a lower case ‘u,’ etc), along with other orthographic attributes that determine the overall appearance of the drug name when scripted (see detail in Table 1 below). Additionally, since verbal communication of medication names is common in clinical settings, the Medication error staff compares the pronunciation of the proposed proprietary name with the pronunciation of other drug names. If provided, we will consider the Applicant’s intended pronunciation of the proprietary name. However, because the Applicant has little control over how the name will be spoken in practice, we also consider a variety of pronunciations that could occur in the English language.

Table 1. Criteria used to identify drug names that look- or sound-similar to a proposed proprietary name

Type of similarity	Considerations when searching the databases		
	Potential causes of drug name similarity	Attributes examined to identify similar drug names	Potential Effects
Look-alike	Similar spelling	Identical prefix Identical infix Identical suffix Length of the name Overlapping product characteristics	<ul style="list-style-type: none"> Names may appear similar in print or electronic media and lead to drug name confusion in printed or electronic communication Names may look similar when scripted and lead to drug name confusion in written communication
	Orthographic similarity	Similar spelling Length of the name Upstrokes Downstrokes Cross-strokes Dotted letters Ambiguity introduced by scripting letters Overlapping product characteristics	<ul style="list-style-type: none"> Names may look similar when scripted, and lead to drug name confusion in written communication

Sound-alike	Phonetic similarity	Identical prefix Identical infix Identical suffix Number of syllables Stresses Placement of vowel sounds Placement of consonant sounds Overlapping product characteristics	<ul style="list-style-type: none"> Names may sound similar when pronounced and lead to drug name confusion in verbal communication
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Appendix B: Proposed proprietary names for products not approved or approved with another name.

Proprietary Name	Similarity to Treanda
(b) (4)	Look

***These names are proprietary and confidential that should not be released to the public.

Appendix C: Products with no numerical overlap in strength and dose.

Product name with potential for confusion	Similarity to Proposed Proprietary Name	Strength	Usual Dose (if applicable)
Treanda (Choline Fenofibrate)		100 mg	Usual dose: 100 mg/m ² given on days 1 and 2 of a 28-day cycle
Trental	Look and Sound	400 mg	One tablet by mouth three times daily with meals
Trionate	Look	60 mg/5 mg	One tablet by mouth twice daily
Trinate	Look	Prenatal Multi-vitamin	One tablet by mouth once daily
Tripedia	Look	6.7 Lf/ 46.8 mcg/ 5 Lf/ 0.5 mL	0.5 ml as a 5-dose series in infants and children 6 weeks to 7 years of age.
Triant HC	Look	2 mg/1.67 mg/5 mg	1 teaspoonful to 2 teaspoonsful by mouth every 4 to 6 to 8 hours as needed
Ziana	Sound	1.2/0.025% gel	Apply topically to affected area at bedtime

Trientine	Sound	250 mg	750 mg to 1250 mg by mouth per day in 2 to 4 divided doses
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Appendix D: Potential confusing name with numerical overlap in strength or dose

Treanda ® (bendamustine hydrochloride)	100 mg	Usual dose: 100 mg/m² given on days 1 and 2 of a 28-day cycle
Failure Mode: Name confusion	Causes (could be multiple)	Effects
<p>Truvada (emtricitabine and tenofovir) 200 mg/300 mg tablets</p>	<p>Similar spelling of names begin with 'Tr-' and end with 'da'</p> <p>Similar length of name (seven letters)</p> <p>Potential numerical overlap with '200'</p>	<p>Product characteristic differences minimize the likelihood of medication error in the usual practice setting.</p> <p>Dose and route of administration will be required for Treanda prescriptions.</p> <p><i>Rationale:</i></p> <p>The risk of medication error is minimized by product characteristic differences. Treanda is dosed based on body surface area, thus a desired dose or body surface area, must be included on prescription orders. Additionally since Treanda will most likely only be used on an inpatient basis, orders will most likely be included on a chemotherapy order form and include a route of administration. Furthermore, Treanda is given only on days 1 and 2 of a 28 day chemotherapy cycle. Conversely Truvada will most likely be used primarily on an outpatient basis and dosed once daily. Prescription orders for Truvada may not include a dose or a route of administration since Truvada is only available in one strength and one dosage form.</p>
<p>Namenda (Memantine) 5 mg, 10 mg tablets 2 mg/mL oral solution</p>	<p>Similar spelling (-nda)</p> <p>Numerical similarity in strengths (100 mg versus 10 mg). Could be exacerbated if a trailing zero (e.g. 10.0) is included with Namenda 10 mg</p>	<p>Orthographic and phonetic differences in the names and product characteristic differences minimize the likelihood of medication error in the usual practice setting.</p> <p><i>Rationale:</i></p> <p>The risk of medication error is minimized by the orthographic and phonetic differences in the names along with differing product characteristics. The beginnings of each name differ orthographically and phonetically (Trea- vs Name) which help differentiate the names from one another.</p> <p>Usual practice would not typically involve the inclusion of trailing zeros, though medication errors have been linked to this dangerous habit. Numerous campaigns (JCAHO, ISMP, FDA) to eliminate use of trailing zeros when communicating drug information should help to further reduce risk of medication error.</p> <p>Treanda is dosed based on body surface area, thus a desired dose or</p>

		<p>body surface area, must be included on prescription orders. Additionally since Treanda will most likely only be used on an inpatient basis, orders will most likely be included on a chemotherapy order form and include a route of administration. Furthermore, Treanda is given only on days 1 and 2 of a 28 day chemotherapy cycle. Conversely Namenda will most likely be used primarily on an outpatient basis and dosed once daily.</p>
<p>Trandate (labetalol) 100 mg, 200 mg and 300 mg tablets 5 mg/mL solution for injection</p>	<p>Orthographic similarities, Tr-, '-nda'. Numerical overlap (100 mg)</p>	<p>Orthographic differences in the names and differing product characteristics reduce the risk of medication errors in the usual practice settings.</p> <p><i>Rationale:</i></p> <p>The risk of medication errors is reduced by the orthographic differences in the names. The letters -nda- which are shared by each name are presented in differing positions in each name (end of Treanda vs. middle of Trandate). Additionally, the cross-stroke of the letter 't' at the end of Trandate helps to differentiate the names from one another. Moreover, Trandate appears longer when scripted.</p> <p>The risk of medication errors is further reduced by the differing product characteristics. Treanda is dosed based on body surface area, thus a desired dose or body surface area, must be included on prescription orders. Additionally since Treanda will most likely only be used on an inpatient basis, orders will most likely be included on a chemotherapy order form and include a route of administration. Furthermore, Treanda is given only on days 1 and 2 of a 28 day chemotherapy cycle. Conversely, Trandate, if used on an inpatient basis and given intravenously, is dosed up to every 10 minutes up to a total dose of 300 mg. When taken orally, Trandate is dosed by mouth twice daily.</p>

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