AACE, ATA, TES

Clinical Concerns Regarding Random Substitution for Levothyroxine Preparations

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Notation

AB1: Product rating using **Unithroid** as “reference drug,” considered interchangeable with Unithroid.

AB2: Product rating using **Synthroid** as “reference drug,” considered interchangeable with Synthroid.

AB3: Product rating using **Levoxyl** as “reference drug,” considered interchangeable with Levoxyl.

Drugs within a TE rating will likely be interchanged within the same three character products unless prescriber specifies “No Substitution,” “Brand Name Necessary,” “Dispense as Written,” etc.

BX: Not Interchangeable

AB Ratings

For Reference Drugs:

Column designation is being compared to row designation

For Generic Formulations:

Row designation is being compared to column designation

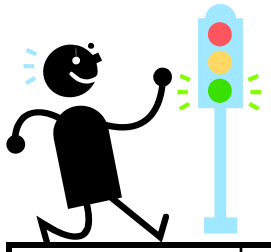
Note about LevoT and Mylan

LevoT and LT4-Mylan are both AB2 to Synthroid and AB3 to Levoxyl. However, LevoT and LT4-Mylan are not interchangeable (BX) because they have not been evaluated in regard to one another.

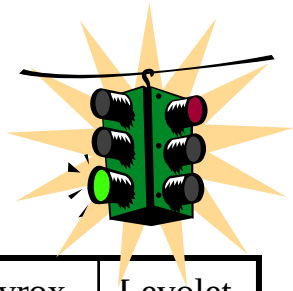
Thyroxine Product Status

	Synthroid	Levoxyl	Levothroid	Unithroid	LevoT	LT4 Mylan	Novothyrox	Levolet
Synthroid (Abbott)		BX	BX	AB2	AB2	AB2	BX	BX
Levoxyl (Jones)	BX		BX	AB3	AB3	AB3	BX	BX
Levothroid (Forest)	BX	BX		BX	BX	BX	BX	BX
Unithroid (Stevens)	AB1	AB1	BX		BX	AB1	BX	BX
LevoT (Alara / Sandoz)	AB2	AB3	BX	BX		BX	BX	BX
LT4 Mylan	AB2	AB3	BX	AB1	BX		BX	BX
Novothyrox (Genpharm)	BX	BX	BX	BX	BX	BX		BX
Levolet (Vintage)	BX	BX	BX	BX	BX	BX	BX	

As of September 15, 2006



Thyroxine Product Status



	Synthroid	Levoxyl	Levothroid	Unithroid	LevoT	LT4 Mylan	Novothyrox	Levolet
Synthroid (Abbott)		**BX**	**BX**	**AB2**	**AB2**	**AB2**	**BX**	**BX**
Levoxyl (Jones)	**BX**		**BX**	**AB3**	**AB3**	**AB3**	**BX**	**BX**
Levothroid (Forest)	**BX**	**BX**		**BX**	**BX**	**BX**	**BX**	**BX**
Unithroid (Stevens)	**AB1**	**AB1**	**BX**		**BX**	**AB1**	**BX**	**BX**
LevoT (Alara / Sandoz)	**AB2**	**AB3**	**BX**	**BX**		**BX**	**BX**	**BX**
LT4 Mylan	**AB2**	**AB3**	**BX**	**AB1**	**BX**		**BX**	**BX**
Novothyrox (Genpharm)	**BX**	**BX**	**BX**	**BX**	**BX**	**BX**		**BX**
Levolet (Vintage)	**BX**	**BX**	**BX**	**BX**	**BX**	**BX**	**BX**	

BX – Not Interchangeable **AB – Interchangeable** As of September 15, 2006

What are the odds of a patient receiving a therapeutically equivalent Thyroxine preparation?

When substitution becomes essentially random because:

a) Prescriber does not specify “No Substitution,” “Brand Name Necessary,” “Dispense as Written,” etc.

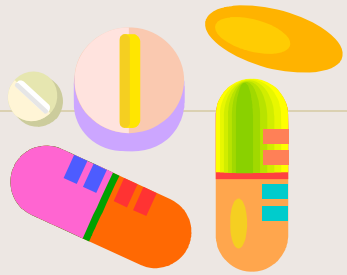
b) Pharmacist is not completely familiar with complex grid

AB / (AB + BX) = 14/56 = ***25%***

In Summary

Eight levothyroxine preparations are available in the United States. According to leading professional societies (AACE, ATA and TES), the FDA has deemed some preparations to be therapeutically equivalent that might not be. In any event most preparations have not been formally compared with one another. Therefore, according to all, including the FDA, random substitution of proprietary or generic preparations with one another is not appropriate since most are not therapeutically equivalent to one another.

In Summary cont.



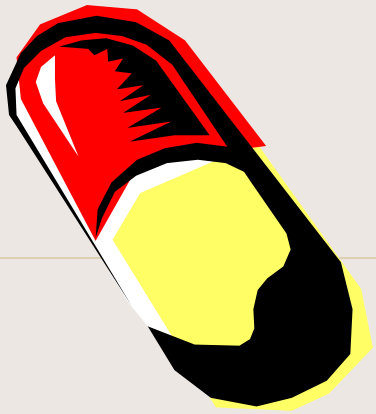
The following has happened:

1. Patients may not know that their thyroxine preparations have been changed.
2. Physicians frequently do not know that different thyroxine preparations have been dispensed to their patients.
3. Many pharmacists and most physicians are not conversant enough with recent modifications to the therapeutic equivalence codes of available formulations to counsel patients properly about their thyroid medication.

In Summary cont.

Simply put, it is too complex!

Conclusion



It has become increasingly unlikely that a patient will be given therapeutically equivalent thyroxine over time. This constitutes a public safety issue that the FDA has failed to address since May 23, 2005, when it was brought to its attention during an Equivalence of Levothyroxine Sodium Products Joint Public Meeting.