


8. Ray, “Plavix may be next on FDA’s list of drugs to relabel with genetic testing data”, GenomeWeb 2008

For Further Information
Please Contact Your Representative

Enhancing Patient Care with CYP2C19 Testing
Clopidogrel (Plavix) is given for patients with Acute Coronary Syndrome and especially for stent procedures.

> 90 million patients are on Plavix.

Up to 30% of patients treated with standard doses of Plavix respond poorly, thus increasing their risk of recurrent ischemic events.

Genetic variations in 2C19 have been shown to significantly affect response to Clopidogrel and alter clinical outcomes; such variations include *2, *3, *4, *5, *6, *7 Non-functional, *8, *9, *10 Reduced Function, *17 Increased Function.

CYP450 2C19 mutations are present in high percentages of ethnic populations:

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<tr>
<th>Frequency of Mutations</th>
<th>Caucasian</th>
<th>African American</th>
<th>Asian</th>
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FDA Updates Plavix Package Insert with Black Box Warning

The warning addresses patients that do not effectively metabolize the drug (i.e., poor metabolizers) and subsequently will not receive the full benefits of the anticoagulant Plavix.

The Box Warning includes information:

- Warning of the reduced effectiveness of the drug in patients who are poor metabolizers of the drug (poor metabolizers will not be able to effectively convert Plavix into its active form).
- Informing the healthcare providers of the existence of tests that can identify the genetic differences in their patients’ CYP2C19 metabolic function.
- Advising healthcare providers to consider the use of other antiplatelet medications or alternative dosing strategies for Plavix, for patients who are poor metabolizers.

“Personalizing clopidogrel dosing using pharmacogenomics may be an effective method of optimizing treatment… rapid genotyping will be necessary for pharmacogenomics to be useful in the clinical setting.”

- Gladding, et al. 7

11/20/2009

Cytochrome P450 Polymorphisms and Response to Clopidogrel

- New England Journal of Medicine

Carriers of CYP2C19 genetic variations exhibited:

- A 53% increased risk in death from cardiovascular causes, MI, and stroke.
- Increased risk of stent thrombosis by a factor of 3.

“We have shown that genetic variation has an effect on pharmacologic and clinical responses to clopidogrel. Carriers of a reduced-function 2C19 allele have… a higher rate of major adverse cardiovascular events…”

- Mega, et al. 3

12/22/2008