Iverson’s Clopidogrel GenoSTAT Test Determines Patient Clopidogrel Metabolism Before You Prescribe

FDA warns that poor metabolizers of clopidogrel are at increased risk for adverse cardiovascular events
Are Your Patients At Risk?

The Food and Drug Administration estimates that between 2 and 14% of the US population are poor metabolizers of clopidogrel. Moreover, recent research indicates that up to 40% of patients may be ultra-rapid metabolizers of clopidogrel. Treated at recommended doses, poor and ultra-rapid metabolizer patients exhibit higher cardiovascular event rates following acute coronary syndrome (ACS) or after undergoing percutaneous coronary intervention (PCI) with stenting than patients with normal drug metabolism. Alternative treatment or treatment strategies should be considered in patients identified as poor or ultra-rapid metabolizers.

You Can Know Before You Prescribe

Iverson’s Clopidogrel GenoSTAT test can quickly determine the effectiveness of clopidogrel to reduce the potential of an adverse event. This test complements other clopidogrel testing methods that may require patients be on the drug for 7-10 days before knowing its effectiveness. Mutations in the CYP2C19 gene cause a loss- or gain-of-function in the liver enzyme that converts clopidogrel to its active form. The test clearly and quickly reports your patient’s CYP2C19 gene mutation(s) and their metabolizer type (poor, intermediate, extensive, or ultra-rapid), which can help determine if your patient should be prescribed clopidogrel.

Having one or more CYP2C19 genetic mutation(s) is associated with:
1. altered (reduced or accelerated) conversion to the active metabolite of clopidogrel, resulting in altered levels of platelet inhibition; and
2. a higher rate of major adverse cardiovascular events (including bleeding and stent thrombosis) than non-carriers with the *1/*1 homozygous (normal) genotype.

Testing Specifics and Incidence

PlaviSTAT identifies the genetic (CYP2C19) cause of an individual’s clopidogrel resistance or sensitivity by detecting eight mutations of the Cytochrome P450-2C19 gene. This genetic information helps in determining each patient’s therapeutic strategy (i.e., consideration of altered dosing or treatment with an alternate drug).

On March 12, 2010, the FDA released a new Boxed Warning alerting healthcare professionals that tests are available to assess a patient’s genotype to determine if they are a poor metabolizer of clopidogrel.
The normal or "wild" type of the CYP2C19 gene is designated *1. The most commonly identified mutations causing CYP2C19 enzyme loss-of-function and subsequent reduced levels of active (functional) clopidogrel are *2 and *3. *17 is a recently identified unique mutation causing CYP2C19 enzyme gain-of-function. A recent study found that the *17 gene mutation resulted in about a 2- to 4-fold increase in the incidence in bleeding after 30 days following stent placement.

A large study identified non-genetic factors that correlate with poor response to clopidogrel (age >65 yrs, Type 2 diabetes, decreased left ventricular function, renal failure, and acute coronary syndrome). The combination of platelet function testing and genotyping may be complementary in risk prediction.

The Iverson Difference

Iverson Genetic Diagnostics provides physicians with genetics-based testing and prognosis solutions that identify a patient’s predisposition to major diseases and the therapeutic considerations that can improve treatment outcomes and quality of life. Our initial solutions have focused on enhancing the safety and effectiveness of anticoagulation drugs, including two of the world’s most widely prescribed medications for patients at risk of stroke and other serious circulatory problems. These timely and cost effective tests can help to significantly reduce adverse bleeding and other events in patients that could benefit from dosage adjustments or alternative therapies.

At Iverson we offer:

- **24-hour turnaround.** PlaviSTAT samples are quickly processed and results reported, normally within one working day of receipt.

- **Understandable reports.** PlaviSTAT test results are clearly presented with the needs of the medical professional in mind.

- **PhD clinical support.** Should you have any questions or need more detailed information regarding test results, there are PhD level support personnel waiting for your call.

- **Simple procedures.** Our GoGenetic test kits are easy to use. Instructions for sample collection and shipping are straight forward and when more kits are needed, they are just a phone call away.
References


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Iverson strives to offer the best laboratory customer service. We’re dedicated to supporting healthcare providers with all the tools they need to go genetic. To order test kits or to speak with one of our account specialists, please contact us today.

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