

To: Asante TRMC Health Care Providers  
From: Michael Reedy MD, Lab Medical Director  
Date: September 16, 2015  
Subject: **Heparin anti-Xa Level**

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Heparin anti-Xa levels are now available 24/7 with a 2-hour TAT once the specimen reaches Rogue Regional Medical Center Lab where testing is performed.

The "Heparin anti-Xa level" assay measures the concentration of either standard unfractionated heparin or low molecular weight heparin in the blood rather than generating a time to clot formation as does the PTT. (Note that the Heparin anti-Xa level is not a test of the patient's own endogenous Xa activity). The Heparin anti-Xa assay is not subject to interfering factors such as the Lupus anticoagulant, or variation of other factor levels, as can occur in genetic deficiencies, liver disease, warfarin therapy, stress, or consumptive coagulopathy.

The Heparin anti-Xa assay may be used to assess unfractionated heparin dosing in those patients who exhibit so-called heparin resistance or who do not appear to be responding appropriately when followed by the PTT. Low molecular weight heparin, which is cleared by the kidneys, does not usually need monitoring. However, when therapeutic effects are not as expected, the blood concentration may be of use in women who are pregnant, obese patients, the very young or elderly, or patients with altered renal function.

#### Collection timing and requirements

In the setting of unfractionated heparin therapy, the assay does not have significant time dependence and may be drawn at any time to periodically monitor the achieved blood levels.

When used to monitor LMWH, the Heparin anti-Xa is usually collected 4 hours post dose but no later than 6 hours, so as to assess the peak blood level. In cases where there is a question of drug clearance, trough levels should be collected just prior to the patient receiving the next dose.

The sample is drawn in a properly filled 3.2 % sodium citrate blue top tube and transported to the lab STAT as special handling is needed after arrival in the lab.

#### Interpretation of results

The Heparin anti-Xa level assay yields a concentration in IU/mL. Note that the therapeutic ranges for unfractionated heparin and low molecular weight heparin are different. Test results will include both reference ranges as the laboratory will not know which preparation of heparin a patient has received.

For questions regarding Heparin anti-Xa testing, please contact ARRCM Hematology Technical Specialist, Kathy Erickson, at 541-789-5708 or pathologists Dr. Tom Treger and Dr. Allison Loudemilk, at 541-789-4191.