

Lab Testing Update

New Coagulation Tests

St Elizabeth Healthcare
1 Medical Village Drive
Edgewood KY 41017
Lab - 859-301-2170

Attention: SEH Medical Staff:

Tests Orders Names: Heparin Anti-Xa, Low Molecular Weight
Heparin Anti-Xa, Unfractionated.

Available - 3-15-11

Purpose: The anti-Xa assays are used to monitor unfractionated heparin (UF) and low molecular weight heparin (LMW). UF heparin requires careful monitoring due to a variable dose response. In contrast LMWH has a predictable dose response, therefore monitoring is usually not required except in certain conditions (obesity, renal insufficiency, pregnancy, children, and unexplained bleeding with LMW heparin). The laboratory will discontinue aPTT monitoring for heparin. aPTT will still be available for coagulation screening and monitoring of direct thrombin inhibitors.

Specimen: Plasma, one blue top (sodium citrate) tube

Sampling Time: Draw specimen 4 hours after subcutaneous injection of LMW heparin and 6 hours after UF heparin bolus or falsely low values may occur. The therapeutic antifactor Xa ranges with subcutaneous LMW heparin are defined for the peak levels. For UF heparin drip the specimen can be drawn anytime.

Collection: Routine venipuncture. Deliver tube to laboratory immediately, otherwise falsely low values may occur (because platelets release platelet factor 4 [PF4] which can neutralize heparin or LMWH). If multiple tests are being drawn, draw blue top tubes first, or especially before any lavender top (EDTA), green top (heparin), or gray top (oxalate/fluoride) tubes. Immediately invert tube gently at least 4 times to mix. Tubes must be appropriately filled.

Methodology: Chromogenic. An antithrombin deficient patient will not be missed by the assay, because no exogenous antithrombin is added to the reaction mix.

Locations performing the test: Edgewood, Florence, Fort Thomas, Grant County

Turnaround Time: Same as PT and aPTT.

Reference Intervals

Patients not on anticoagulants: 0 units/mL

Therapeutic range for treatment of existing deep venous thrombosis (DVT)

- Unfractionated heparin: 0.3-0.7 IU/mL
- LMW heparin: 0.4-1.1 IU/mL for twice daily injection. Draw 4 hours after injection.
- LMW heparin: 1.0-2.0 IU/mL for once daily injection. Draw 4 hours after injection.

Range of LMW heparin for prophylaxis: No defined target range, but when measured mean values have been 0.2-0.4 IU/mL

Alert value: 1.1 IU/mL or greater for UF heparin. No defined value exists for LMW heparin.

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Causes of subtherapeutic antifactor Xa level:

- Specimen drawn at incorrect time
- Specimen transportation longer than 2 hours
- Higher dose needed (uncommon with LMW heparin, more common with heparin, eg, an acute phase state often increases the heparin dose requirement)

Causes of supratherapeutic antifactor Xa level:

- Renal failure
- Heparin contamination, if specimen was drawn from a line
- Lower dose needed (uncommon with LMW heparin, more common with heparin)

Note: An additional test, **Heparin Anti-Xa Arixtra**, will be available sometime in April for the rare situations where monitoring Arixtra is desired (e.g. infants, children, obese or underweight patients, or those with renal disease, long-term treatment, pregnancy, or unexpected bleeding or washout before surgery). Notification of the Heparin Anti-Xa Arixtra test will be sent in a subsequent Lab Test Update.

Please contact the Laboratory (859)301-2170 for questions concerning the new tests offered.