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Bulletin Technical

Heparin Anti-Factor Xa Assays for Low Molecular Weight Heparin and Unfractionated Heparin

On May 23, 2006, The Pathology Center, Methodist Hospital, will offer heparin anti-Factor Xa assays for monitoring low molecular weight heparin (LMWH) and unfractionated heparin (UFH) therapy.

The heparin anti-Xa test is the only assay available for monitoring low molecular weight heparin (Lovenox), since LMWH has minimal effect on the aPTT. Additionally, it is the most accurate assay for monitoring unfractionated heparin therapy, especially in patients with a prolonged baseline aPTT due to a lupus anticoagulant or when the UFH dose needed to achieve desired aPTT prolongation is unpredictably higher (>50%) than expected. [Recommended UFH anti-Factor Xa levels for prophylaxis are 0.1 – 0.4 U/mL.](#)

The time of collection is important in determining the therapeutic efficacy of LMWH. The recommended time of collection is 3-4 hours after subcutaneous injection of LMWH. For prophylactic treatment, LMWH anti-factor Xa is useful in patients with very low or high body weight, renal insufficiency, bleeding or thrombotic episodes. [Recommended LMWH anti-Factor Xa levels for prophylaxis are 0.2 – 0.4 U/mL.](#)

Low Molecular Weight Heparin Anti-Factor Xa Assay (Anti-Factor Xa LMWH)

Expected Therapeutic Range: 0.5 – 1.1 U/mL

Unfractionated Heparin Anti-Factor Xa Assay (Anti-Factor Xa UFH)

Expected Therapeutic Range: 0.3 – 0.7 U/mL

REFERENCES:

1. Olson JD, Arkin, CF, Brandt, JT, et al. College of American Pathologists Conference XXXI: Laboratory Monitoring of Anticoagulant Therapy. Arch Pathol Lab Med. 1998; 122(9):782-798.
2. Laposata M, Green D, Van Cott EM, et al. College of American Pathologists Conference XXXI: Laboratory Monitoring of Anticoagulant Therapy. Arch Pathol Lab Med. 1998; 122(9):799-807.
3. Samama MM. Contemporary Laboratory Monitoring of Low Molecular Weight Heparins. Clinics Lab Med. March, 1995; 15(1): 119-123.
4. Hirsh J, Anand SS, Halperin JL, et al. Guide to anticoagulant therapy: Heparin: A statement for healthcare professionals from the American Heart Association. Circulation. 2001; 103(24):2994-3018.
5. Hirsh J, Warkentin TE, Shaughnessy SG, et al. Heparin and low-molecular-weight heparin: Mechanisms of action, pharmacokinetics, dosing, monitoring, efficacy, and safety. Chest. 2001 Jan; 119(Suppl): 64S-94S.

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