LabWire
Laboratory News and Analysis for Clinicians November 2019

New Heparin Monitoring Protocol

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Unfractionated heparin (UFH) and low-molecular-weight heparin (LMWH) exert their anticoagulant effect via antithrombin, which accelerates the inhibition of the intrinsic coagulation factors, FX, and thrombin (FII). As such, the activated partial thromboplastin time (aPTT), a global clot-based assay, has long been used to monitor heparin therapy. aPTT has a number of limitations due to the highly variable response to UFH that is dependent on aPTT reagents, instrumentation, patient-to-patient variation, lupus anticoagulant interference, factor deficiencies, high levels of FVIII, and the heparin preparation itself.

This month, Bronson will begin using a new assay to monitor heparin therapy. The chromogenic heparin anti-Xa assay (AKA heparin level) provides a direct measurement of heparin activity. Because this test is more specific for heparin, it is not affected by lupus anticoagulants or altered factor levels. Additionally, studies have shown that using an anti-Xa-based protocol for heparin monitoring was associated with reaching therapeutic values faster, longer maintenance of therapeutic levels, and required fewer dose adjustments and repeat tests.

Changes to Expect:

- New heparin dose adjustment nomogram and target ranges
- Updated heparin protocol posted in the online manuals
- Updated heparin order sets (VTE/DVT, A-fib, ACS, Stroke)
- Heparin anti-Xa assays (test code-UFHXA) will replace aPTT for heparin therapy monitoring in most cases
    - Exception for patient recently taking a direct oral anticoagulant (e.g. apixaban, rivaroxaban, edoxaban, betrixaban)
- Nurse administration directions modified to reflect changes in target

What will NOT change:

- Both assays require a blue top tube
- A baseline one-time aPTT at the time of heparin therapy initiation is still indicated (in addition to anti-Xa assay) as a screening for other coagulation deficiencies
- aPTT will still be available for other indications
- Heparin dose recommendations (see protocol in online manuals)
- Timing of heparin monitoring
    - Begin 6 hours after initiation, and continue every 6 hours until 2 consecutive therapeutic levels are reached DVT (0.3 - 0.7 U/mL), Cardiac/Neuro (0.3-0.5 U/ml)
    - Then the anti-Xa assay will be drawn once daily
- Direct thrombin inhibitor (argatroban) monitoring with aPTT (see protocol online for target aPTT range for these agents)

Caveats of the anti-Xa assay

- Patients receiving direct oral anticoagulants (DOACs), designed to inhibit factor Xa activity (e.g. apixaban, rivaroxaban, edoxaban, betrixaban), may have spuriously high anti-Xa activity

Obsolete Test: Gram Stain ONLY

When: As of 11/5/19, gram stain only orders are no longer available.

Why: Gram stain only results yield low clinical value when ordered alone. Gram Stain results are most valuable in conjunction with a bacterial culture/LAB897.

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Battle Creek College St. Location Set to Close with Opening of New Location at BBC Outpatient Center

The current Bronson Battle Creek laboratory draw site located on College St. is set to close on Saturday, January 4 at noon. A new lab location, on the first floor of the Bronson Battle Creek Outpatient Center, will open at 6:30 a.m. on Monday, January 6. The new location will offer patients the added convenience of proximity to physician offices, the Cancer Care Center, pharmacy and hospital and is just .3 miles from the current College St. lab. Hours for the new location will be 6:30 a.m. to 5 p.m. Monday through Friday, and Saturday from 7 a.m. to noon. Questions? Contact us at (269) 969-6161.

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