Anti factor Xa measurement

What is this test?

This test measures anti-activated factor X (anti-Xa) in blood[1][2][3]. The amount of factor Xa in blood is affected by the amount of heparin in the body. This test is used to monitor heparin levels in patients being treated with standard heparin[1][2][4] or low molecular weight heparin[5][6][7][1][3].

What are other names for this test?

Anti factor Xa level

What are related tests?

Partial thromboplastin time, activated
Heparin-protamine titration assay

Why do I need this test?

Laboratory tests may be done for many reasons. Tests are performed for routine health screenings or if a disease or toxicity is suspected. Lab tests may be used to determine if a medical condition is improving or worsening. Lab tests may also be used to measure the success or failure of a medication or treatment plan. Lab tests may be ordered for professional or legal reasons. The following are possible reasons why this test may be done:

Heparin therapy
Low molecular weight heparin therapy

When and how often should I have this test?

When and how often laboratory tests are done may depend on many factors. The timing of laboratory tests may rely on the results or completion of other tests, procedures, or treatments. Lab tests may be performed immediately in an emergency, or tests may be delayed as a condition is treated or monitored. A test may be suggested or become necessary when certain signs or symptoms appear.

Due to changes in the way your body naturally functions through the course of a day, lab tests may need to be performed at a certain time of day. If you have prepared for a test by changing your food or fluid intake, lab tests may be timed in accordance with those changes. Timing of tests may be based on increased and decreased levels of medications, drugs or other substances in the body.

The age or gender of the person being tested may affect when and how often a lab test is required. Chronic or progressive conditions may need ongoing monitoring through the use of lab tests. Conditions that worsen and improve may also need frequent monitoring. Certain tests may be repeated to obtain a series of results, or tests may need to be repeated to confirm or disprove results. Timing and frequency of lab tests may vary if they are performed for professional or legal reasons.

How should I get ready for the test?

Before having blood collected, tell the person drawing your blood if you are allergic to latex. Tell the healthcare worker if you have a medical condition or are using a medication or supplement that causes excessive bleeding. Also tell the healthcare worker if you have felt nauseated, lightheaded, or have fainted while having blood drawn in the past.

How is the test done?

When a blood sample from a vein is needed, a vein in your arm is usually selected. A tourniquet (large rubber strap) may be secured above the vein. The skin over the vein will be cleaned, and a needle will be inserted. You will be asked to hold very still while your blood is collected. Blood will be collected into one or more tubes, and the tourniquet will be removed. When enough blood has been collected, the healthcare worker will take the needle out.

How will the test feel?

The amount of discomfort you feel will depend on many factors, including your sensitivity to pain. Communicate how you are feeling with the person doing the test. Inform the person doing the test if you feel that you cannot continue with the test.

During a blood draw, you may feel mild discomfort at the location where the blood sample is being collected.

What should I do after the test?

After a blood sample is collected from your vein, a bandage, cotton ball, or gauze may be placed on the area where the needle was inserted. You may be asked to apply pressure to the area. Avoid strenuous exercise immediately after your blood draw. Contact your healthcare worker if you feel pain or see redness, swelling, or discharge from the puncture site.

What are the risks?

Blood: During a blood draw, a hematoma (blood-filled bump under the skin) or slight bleeding from the puncture site may occur. After a blood draw, a bruise or infection may occur at the puncture site. The person doing this test may need to perform it more than once. Talk to your healthcare worker if you have any concerns about the risks of this test.

What are normal results for this test?

Laboratory test results may vary depending on your age, gender, health history, the method used for the test, and many other factors. If your results are different from the results suggested below, this may not mean that you have a disease. Contact your healthcare worker if you have any questions. The following are considered to be normal results for this test:

Adults, low molecular weight heparin: Therapeutic range 0.5-1 International Units/mL[8]
Adults, unfractionated heparin: Therapeutic range 0.3-0.7 International Units/mL[8]

What follow up should I do after this test?

Ask your healthcare worker how you will be informed of the test results. You may be asked to call for results, schedule an appointment to discuss results, or notified of results by mail. Follow up care varies depending on many factors related to your test. Sometimes there is no follow up after you have been notified of test results. At other times follow up may be suggested or necessary. Some examples of follow up care include changes to medication or treatment plans, referral to a specialist, more or less frequent monitoring, and additional tests or procedures. Talk with your healthcare worker about any concerns or questions you have regarding follow up care or instructions.

Where can I get more information?

Related Drugs

Heparin
Enoxaparin
Dalteparin

References

1. 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; 119:64S-94S.
2. Kitchen S, Theaker J, & Preston FE: Monitoring unfractionated heparin therapy: relationship between eight anti-Xa assays and a protamine titration assay. Blood Coagulation and Fibrinolysis 2000; 11(2):137-144.
3. Laposata M, Green D, Van Cott EM, et al: College of American Pathologists Conference XXXI on laboratory monitoring of anticoagulant therapy: the clinical use and laboratory monitoring of low-molecular-weight heparin, danaparoid, hirudin and related compounds, and argatroban. Arch Pathol Lab Med 1998; 122(9):799-807.
4. Olson JD, Arkin CF, Brandt JT, et al: College of American Pathologists Conference XXXI on laboratory monitoring of anticoagulant therapy: laboratory monitoring of unfractionated heparin therapy. Arch Pathol Lab Med 1998; 122(9):782-798.
5. Monagle P, Chan A, Massicotte P, et al: Antithrombotic therapy in children: the seventh ACCP conference on antithrombotic and thrombolytic therapy. Chest 2004; 126(3 Suppl):645S-687S.
6. Greaves M: Limitation of the laboratory monitoring of heparin therapy. Scientific and Standardization Committee Communications: on behalf of the Control of Anticoagulation Subcommittee of the Scientific and Standardization Committee of the International Society of Thrombosis and Haemostatis. Thromb Haemost 2002; 87(1):163-4.

7. Becker RC, Spencer FA, Gibson M, et al: Influence of patient characteristics and renal function on factor Xa inhibition pharmacokinetics and pharmacodynamics after enoxaparin administration in non-ST-segment elevation acute coronary syndromes. Am Heart J 2002; 143(5):753-759.
8. Kratz A, Ferraro M, Sluss PM, et al: Case records of the Massachusetts General Hospital: laboratory values. N Engl J Med 2004; 351(15):1549-1563.