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Thrombin Time—Serum

Norm.

Within 2 seconds of 9-second to 13-second control value; or within 5 seconds of 15-second to 20-second control value; or <1.5 times control value.

Increased.

Acute leukemia, afibrinogenemia, amyloidosis, cirrhosis, disseminated intravascular coagulation (DIC), dysfibrinogenemia, epistaxis, factor deficiency, fibrinopenia, lymphoma, obstetric complications, polycythemia vera, shock, and stress. Drugs include asparaginase, fibrin degradation products, heparin, streptokinase, tissue plasminogen activator (TPA), uremia, and urokinase.

Decreased.

Thrombocytosis.

Description.

Thrombin is an enzyme that functions in the release of fibrin from fibrinogen in the final stage of the clotting cascade. This test measures the clotting time of a sample of plasma to which thrombin has been added. Thrombin time is longer than normal when abnormalities in the conversion of fibrinogen into fibrin are present.

Professional Considerations

Consent form NOT required.

Preparation

1. Tube: 2.7-mL blue-topped or 4.5-mL blue-topped tube and a control tube, and a waste tube or syringe.

Procedure

1. Withdraw 2 mL of blood into a syringe or vacuum tube. Remove the syringe or tube, leaving the needle in place. (From a heparinized line, discard an amount equal to the volume of the tubing prime.) Attach a second syringe, and draw a blood sample volume of 2.4 mL for a 2.7-mL tube and 4.0 mL for a 4.5-mL tube.
2. Gently tilt the tube five or six times to mix the sample.

Postprocedure Care

1. Send the sample to the laboratory within 2 hours.
2. Refrigerate the sample. The plasma should be frozen if it is not tested promptly.

Client and Family Teaching

1. Results can be available within an hour.

Factors That Affect Results

1. Hemolyzed specimens invalidate the results.

2. Failure to discard the first 1–2 mL of blood may result in specimen contamination with tissue thromboplastin.
3. Heparin therapy within 2 days before the test increases the results. Collecting a sample from a heparinized line without discarding the first blood withdrawn can falsely prolong results.
4. A recent blood or plasma transfusion will invalidate the results.

Other Data

1. The test is used as a rapid screening device to detect profound fibrinogen deficiency.
2. This test is not reliable to monitor heparin therapy in clients with DIC.
3. This test will NOT differentiate primary fibrinolysis from DIC.

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