

Prolonged Clot Time Reflex Panel

Indications for Ordering

- Use to evaluate prolonged clotting times such as prothrombin time (PT) and/or partial thromboplastin time (PTT) when cause is unknown
- Most useful for the workup of patients with unexpected prolonged clotting times
- Condition-specific testing is preferred when the patient has a known coagulation disorder or a clear bleeding presentation

Test Description

Electromagnetic mechanical clot detection/qualitative hemagglutination/platelet agglutination/microlatex particle-mediated immunoassay

Tests to Consider

Typical testing strategy

- Reflexive panel beginning with basic clotting times (PT, PTT, dilute Russell viper venom time [DRVVT]), lupus anticoagulant testing, fibrinogen, and d-dimer
- Based on the patterns observed, additional reflexive testing may include coagulation factor assays and von Willebrand factor testing
- Reflexive test selection by ARUP Hemostasis/Thrombosis medical directors

Primary test

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- Determine the cause of a prolonged PT or PTT
- The reflexive panel provides a comprehensive workup to determine the etiology of prolonged clotting times, including lupus anticoagulants and factor deficiencies or inhibitors
- In rare circumstances in which a definitive cause for prolonged clotting time is not identified by testing available within the panel, appropriate follow-up testing will be recommended in the customized panel interpretation

Disease Overview

- Clotting time tests such as PT and/or PTT are commonly performed in the outpatient or hospital setting for a variety of reasons, including
 - Workup of a bleeding tendency
 - Workup of antiphospholipid syndrome
 - Presurgical evaluation
 - Guidance for blood product replacement
 - Monitoring of anticoagulant medications
- Prevalence of prolonged clotting times varies depending on the setting and on patient- and laboratory-specific factors
- Prolonged clotting times of unclear etiology may require further evaluation to determine cause and to exclude clinically significant bleeding disorders

Symptoms

Symptoms associated with prolonged clotting times depend on the underlying etiology

- Patients with a lupus anticoagulant associated with antiphospholipid syndrome may be asymptomatic or may have elevated thrombotic risk
 - Such patients are generally not at increased risk for bleeding
- Patients with a factor deficiency or inhibitor are at increased risk for bleeding

Diagnostic issues

- This reflexive panel was designed to evaluate prolonged clotting times (PT and/or PTT), particularly in presurgical or other settings where there is not strong clinical or other laboratory evidence suggesting a specific coagulation disorder
- Benefits of this type of panel in these settings include
 - Greater standardization and cost-effectiveness in the assessment of prolonged clotting times
 - More timely diagnosis, avoiding multiple rounds of testing
 - Expert interpretation by medical directors in the lab performing the testing
- A completed patient history form submitted with the test order will allow for optimal panel interpretation and correlation with the clinical setting
- If the patient has a known coagulation disorder or there is strong clinical or other laboratory evidence of a specific coagulation disorder (such as a clear bleeding presentation), condition-specific testing is preferred

Physiology

- Clotting times such as PT and/or PTT enable evaluation of coagulation reactions and are dependent on
 - Presence and function of coagulation factors, including fibrinogen
 - Phospholipid support for the coagulation reactions
 - Calcium availability (affected by specimen collection tube/anticoagulant)
- Problems with any of these components can result in clotting time prolongation

Test Interpretation

Results

- Reflexive test selection and panel interpretation by ARUP Hemostasis/Thrombosis medical directors
- Customized panel interpretation includes the clinical significance of any abnormalities identified and recommendations for follow-up testing, if indicated
- Reference intervals will be provided for each test performed, including age-stratified reference intervals, when appropriate

Limitations

- Current anticoagulant medications may interfere with testing and cause erroneous results
- Recent transfusion or factor replacement may affect results
- Results may be inaccurate in the event of inappropriate specimen collection and handling
 - Clotted specimens (serum specimen or traumatic venipuncture)
 - Line draws (specimen may be contaminated with heparin or IV fluids)
 - Incorrect anticoagulant (anything other than sodium citrate plasma)