

## Prolonged Clot Time Reflex Panel

Clotting time tests such as prothrombin time (PT) and/or activated partial thromboplastin time (aPTT) are commonly used for a variety of reasons, including workup of a bleeding tendency, as part of a presurgical evaluation, as guidance for blood product replacement, or to monitor anticoagulant medication.<sup>1</sup> Prevalence of prolonged clotting time 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.<sup>1</sup> The Prolonged Clot Time Reflex 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.

### Typical Testing Strategy

Based on the patterns observed in this reflex test, additional studies may be recommended by ARUP Hemostasis/Thrombosis medical directors, such as coagulation factor assays and von Willebrand factor testing.

### Disease Overview

#### Symptoms

Symptoms associated with prolonged clotting times depend on the underlying etiology.

- Patients with an LA:
  - May be asymptomatic or may have elevated thrombotic risk<sup>1</sup> (if LA is associated with antiphospholipid syndrome)
  - Generally are not at increased risk for bleeding
- Patients with a factor deficiency or inhibitor are at increased risk for bleeding<sup>2</sup>

#### Diagnostic Issues

- This reflexive panel was designed to evaluate prolonged clotting times (as detected by tests such as PT and/or aPTT), particularly in presurgical or other settings where there is not strong clinical or other laboratory evidence that suggests a specific coagulation disorder
- Panel benefits include:
  - Greater standardization and cost-effectiveness in the assessment of prolonged clotting times
  - More timely diagnosis and avoidance of multiple rounds of testing and multiple phlebotomies for the patient
  - Expert interpretation by medical directors who supervise the lab performing the testing
- A patient history form submitted with the test order allows for optimal panel interpretation and correlation with the clinical setting
- Patients with a known coagulation disorder or strong clinical or other laboratory evidence of a specific coagulation disorder (such as a clear bleeding presentation) should be offered condition-specific testing

#### Physiology

- Clotting times tests, such as PT and/or aPTT, enable evaluation of coagulation reactions and are dependent on<sup>1</sup>:
  - The presence and function of coagulation factors, including fibrinogen
  - Phospholipid support for the coagulation reactions

### Tests to Consider

#### Prolonged Clot Time Reflex Panel 2014318

**Method:** Electromagnetic Mechanical Clot Detection/Qualitative Hemagglutination/Platelet Agglutination/Microlatex Particle-Mediated Immunoassay

- Use to evaluate prolonged clotting times such as PT and/or aPTT 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
- Reflexive panel includes basic clotting times (PT, aPTT, dilute Russell viper venom time [DRVVT]), lupus anticoagulant testing, fibrinogen, and d-dimer

- 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 are performed 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

- Anticoagulant medications may interfere with testing and cause erroneous results<sup>2</sup>
- 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)

### References

1. Kamal AH, Tefferi A, Pruthi RK. [How to interpret and pursue an abnormal prothrombin time, activated partial thromboplastin time, and bleeding time in adults.](#) Mayo Clin Proc. 2007;82(7):864-873. PubMed
2. Kruse-Jarres R, Singleton TC, Leissinger CA. [Identification and basic management of bleeding disorders in adults.](#) J Am Board Fam Med. 2014;27(4):549-564. PubMed

### Related Information

[Antiphospholipid Syndrome - APS](#)  
[Hemophilia - Factor VIII or IX Deficiency](#)  
[Prolonged Clotting Time Evaluation](#)  
[Uncommon Factor Deficiencies](#)  
[Von Willebrand Disease - VWD](#)

ARUP Laboratories is a nonprofit enterprise of the University of Utah and its Department of Pathology. 500 Chipeta Way, Salt Lake City, UT 84108  
(800) 522-2787 | (801) 583-2787 | aruplab.com | arupconsult.com  
Content Review July 2020 | Last Update July 2020