Intravascular Coagulation Screen

Norm.

D-Dimer (fibrin degradation fragment)		<1 µg/mL or <100 µg/L
Fibrinogen		
	Adult	200–400 mg/dL
	Newborn	125–300 mg/dL
Fibrin breakdown products		<10 µg/mL
Platelet count		
	Adult	150,000–400,000/mm^3
	Newborn	84,000–478,000/mm^3
Activated partial thromboplastin time (APTT)		25–35 seconds
Prothrombin time		
	Adult	11–15 seconds
	Newborn	2–35 seconds
Premature		3–5 seconds
Thrombin time		16–23 seconds

Usage.

Differentiation of acute disseminated intravascular coagulation (DIC) from chronic DIC.

Description.

Intravascular coagulation is a process in which multiple fibrin thrombi with micro infarctions lead to tissue and organ necrosis. This is caused by activation of the clotting mechanism and depletion of clotting factors and platelets with a secondary fibrinolysis that results in bleeding. In severe situations, the life-threatening condition of DIC can occur. DIC is triggered when the endothelial or other circulating cells release tissue factor, which activates systemic hemostasis. The systemic activation eventually overcomes natural inhibitor mechanisms, allowing more coagulation to occur. The ongoing coagulation depletes the supply of fibrinogen and platelets, leading to uncontrolled diffuse bleeding. Using a combination of coagulation tests that reveal different aspects of the systemic hemostasis mechanism is necessary to differentiate acute from chronic DIC. The following table lists typical findings for the intravascular coagulation screen in acute and chronic DIC.

Test	Acute DIC	Chronic DIC
D-Dimer	Increased	Increased
Fibrinogen	Decreased	Normal or increased
Fibrin breakdown	Positive	Positive
Platelet count	Decreased (or may appear normal if falling from a baseline high level)	Normal or increased
APTT	Increased	Normal

Prothrombin time	Increased	Normal
Thrombin time	Increased	Increased
Peripheral smear	Schistocytes present	

Professional Considerations

Consent form NOT required.

Preparation

1. Tubes: Three red topped, red/gray topped, or gold topped.

Procedure

1. Draw three 5-mL blood samples in the three tubes.

Postprocedure Care

1. Place a pressure dressing on the venipuncture site. Monitor closely for bleeding.

Client and Family Teaching

1. Clients with disseminated intravascular coagulation (DIC) may be in acute crisis. Support the family; explain that there may be a need for blood product therapy.

Factors That Affect Results

1. Heparin increases clotting time.

Other Data

1. DIC is eliminated only by eliminating the underlying cause. Short-term symptomatic support includes administration of cryoprecipitate, platelet concentrates, and fresh frozen plasma.