Practical Guide to Bleeding Time and Clotting Time

Introduction

Bleeding time (BT) and clotting time (CT) are basic hemostasis tests used to evaluate platelet function and coagulation pathways, respectively.

1.Bleeding Time (BT)

A. Definition: Bleeding time measures the time taken for a small blood vessel injury to stop bleeding, assessing platelet function, vascular integrity, and primary hemostasis.

B. Normal Range : 1-7 minutes (method-dependent)

C. Indications

1. Screening for platelet disorders (e.g., thrombocytopenia, von Willebrand disease).
2. Evaluating primary hemostasis before surgery.

D. Methods

1.Ivy Method (Standard Method)

- A BP cuff is inflated to 40 mmHg on the upper arm.
- A standardized incision is made on the forearm.
- The time until bleeding stops is measured with a filter paper every 30 seconds.

2 .Duke Method (Less Used)

- A finger or earlobe is pricked with a lancet.
- Blood is blotted with filter paper every 30 seconds.
- The time until bleeding stops is recorded.

E. Interpretation

Condition	Bleeding time
Normal	1_7 min
Prolonged BT	Thrombocytopenia, von Willebrand disease, platelet dysfunction (e.g., aspirin use)
Shortened BT	Rare, but seen in high platelet counts (thrombocytosis)

2. Clotting Time (CT)

A. Definition: Clotting time measures the time taken for blood to clot in vitro, evaluating the intrinsic coagulation pathway.

B. Normal Range : 4_10 min minutes

C. Indications

1. Suspected coagulation disorders (e.g., hemophilia, disseminated intravascular coagulation).
2. Assessing secondary hemostasis (fibrin clot formation).

D. Methods

1. Capillary Tube Method (Best Practical Method(

• Procedure:

• Prick the fingertip and fill a capillary tube.

• Break a small segment of the tube every 30 seconds until a fibrin strand appears.

• The time from pricking to clot formation is recorded

2.Lee and White Method (Venous Blood(

• Procedure:

2 mL of venous blood is collected in a glass tube.

• The tube is tilted every 30 seconds to check for clot formation.

• Time until blood clots is recorded.

E. Interpretation:

Condition	Clotting Time
Normal	4 – 10 min
Prolonged CT (>10 min)	Hemophilia, anticoagulant therapy (heparin), severe liver disease
Shortened CT	Rare, but seen in hypercoagulable states

Key Differences Between BT & CT:

Feature	Bleeding Time (BT)	Clotting Time (CT)
Assesses	Platelet function & primary hemostasis	Coagulation factors & secondary hemostasis
Method	Ivy, Duke	Capillary tube, Lee-White
Normal Range	1 – 7 min	4 – 10 min
Prolonged in	Platelet disorders, von Willebrand disease, aspirin use	Hemophilia, liver disease, heparin therapy

Conclusion

1. BT is useful for platelet-related disorders, while CT evaluates coagulation factor deficiencies.
2. Prolonged BT suggests platelet dysfunction or thrombocytopenia, whereas prolonged CT indicates coagulation factor deficiencies like hemophilia.
3. These tests have largely been replaced by PT (Prothrombin Time) and aPTT (Activated Partial Thromboplastin Time) in modern laboratories

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