

# BASIC HEMATOLOGY OVERVIEW

Name \_\_\_\_\_

1. A 4 ys old child is seen in the emergency room with petechiae and a platelet count of  $15 \times 10^9/L$ . She has no previous history of bleeding problems. Three weeks earlier she had chicken pox. The physician advises the parents to keep the child off the playground to avoid injury, and the child will recover within several weeks to a month with no further treatment. What condition does this child most likely have?

- a) Essential thrombocythemia
- b) Idiopathic thrombocytopenic purpura
- c) thrombotic thrombocytopenic purpura
- d) Wiskott-Aldrich syndrome

2. An APTT on a 46 year old male patient admitted for minor surgery is markedly abnormal whereas the PT is within the normal range. The patient has no clinical manifestations of bleeding problem and has no personal or family history of bleeding problems, even following dental extraction. Several family members have been treated for thrombotic episodes. The prolonged APTT is corrected with a 1:1 mixing study using normal plasma. Based on these laboratory results and the clinical history, what factor deficiency would be expected?

- a) II
- b) VIII
- c) XII
- d) XIII

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3. A 25-year-old obstetrical patient at 35 weeks of gestation is admitted through the emergency room. She has bleeding in the genitourinary tract, and there are visible petechial and ecchymosis. The following laboratory results are obtained:

Platelet count: decreased	PT: prolonged
APTT: prolonged	Fibrinogen: decreased
TT: prolonged	D-dimer: positive
FDP: positive	ATIII: decreased
RBC morphology: schistocytes present	

These laboratory results are consistent with

- a) Primary fibrinolysis
  - b) DIC with secondary fibrinolysis
  - c) Factor II deficiency
  - d) Heparin therapy
4. If a pediatric preoperative patient has a family history of bleeding but has never had a bleeding episode herself, what test should be included in a coagulation profile in addition to the PT, APTT and platelet count?
- a) Lee-White clotting time
  - b) Clot retraction
  - c) Bleeding time
  - d) Fibrin split products

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5. If a child ingested rat poison which of the following tests should be performed to test the effect of the poison on the child's coagulation mechanism?

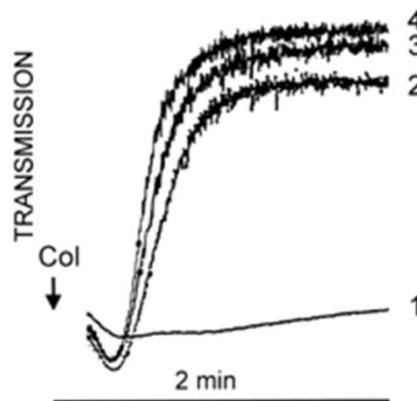
- a) APTT
- b) PT
- c) Fibrinogen assay
- d) Thrombin time

6. A patient has a prolonged APTT and a normal PT. The APTT is not corrected by factor VIII-deficient plasma, but is corrected by factor IX-deficient plasma. In which factor does the patient appear to be deficient?

- a) Factor II    b) Factor V    c) Factor VIII
- d) Factor XI

7. The platelet aggregation pattern drawn below is characteristic of what aggregating agent?

- a) ADP
- b) Collagen
- c) Ristocetin
- d) Thrombin



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8. A 57-year-old man with prostate cancer is admitted to the intensive care unit with severe bleeding problems. The following laboratory results are obtained:

platelet count: normal	PT: prolonged
APTT: prolonged	fibrinogen: decreased
TT: prolonged	D-dimer: negative
FDP: positive	ATIII: normal
RBC morphology: schistocytes absent	

These laboratory results are consistent with:

- a) Primary fibrinolysis
- b) DIC with secondary fibrinolysis
- c) Factor II deficiency
- d) Coumadin therapy

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9. A 22 year old white woman had recently graduated from college and relocated to accept her first professional job. She was being seen for the first time by a local gynecologist because of **prolonged menstrual bleeding**. Her medical history included several episodes of severe **nose bleeds** during childhood that required cauterization to arrest. She reported that her menses lasted from 8 to 12 days. When questioned about family illness or disorders, she reported that **her mother and two sisters** also had long menstrual periods, and that one of her **two brothers** needed several blood transfusions after an appendectomy. Physical examination revealed an essentially normal patient. However she appeared pale and severe large **bruises** were noted on her extremities. The patient was referred to the outpatient laboratory for a haemoglobin, haematocrit, and coagulation profile.

## Laboratory data:

Hgb=10.0 g/dl   Hct=0.27 L/L   Bleeding time=7 minutes  
PT=11.5secs   APTT=29 secs   Clot retraction= decreased.  
Platelet morphology= normal  
Platelet function: deficiency in aggregation and adhesion

Diagnosis \_\_\_\_\_

10. A patient with coronary artery disease is admitted to the hospital with venous thrombosis. What medication can be administered that will lyse the clot?

- a) aspirin
- b) Coumadin
- c) heparin
- d) tissue plasminogen activator

Answers:

1.B

2.C

3.B

4.C

5.B

6.C

7.B

8.A

9. Glanzmann's thrombasthenia

10.D