

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (TRANSFUSION MEDICINE) EXAMINATION - JULY/AUGUST 2018

Date: 30th July 2018

Time: 1.00 p.m. – 4.00 p.m.

PAPER I

Answer any five (05) questions.

Answer each question in a separate book.

1.

1.1. Briefly explain.

1.1.1. serological cross match (15 marks)

1.1.2. electronic cross match (15 marks)

1.2. List the advantages of electronic cross match over serological cross match. (15 marks)

1.3. A blood request was received from primary care unit (PCU) for a 62-year old lady admitted with haematemesis. Her blood group was found to be B positive and antibody screening was negative. Two units of B positive red cells were cross matched by immediate spin technique. Out of two, one unit was found to be incompatible. List the possible causes for the incompatibility. (15 marks)

1.4. Agglutination tests have been the gold standard for identification of blood group antigens for over 100 years, but there are limitations. Discuss situations where determining genotype is superior to phenotype in blood group serology. (40 marks)

2.

2.1. Briefly describe pathophysiology of Disseminated Intravascular Coagulation (DIC). (40 marks)

2.2. List the clinical conditions most frequently associated with DIC. (20 marks)

2.3. How would you manage a patient with Acute Myeloid Leukaemia (AML-M3) having persistent epistaxis, gingival bleeding and widespread ecchymosis for one week and unusually severe menorrhagia? (40 marks)

3. Hepatitis B testing results of three blood donors are given below.

3.1. A blood donor sample had been sent to the National Blood Centre - after initial screening reactive test results for Hepatitis B surface antigen at your centre - was reported as repeat reactive by Enhanced Chemiluminescence Immunoassay (ECI) and Enzyme Linked Immuno Sorbent Assay (ELISA) methods.

Discuss further management of this blood donor. (40 marks)

3.2. Following are the Hepatitis B profile reports of two blood donors;

Gender	HBsAg	Anti-HBc (total)	HBeAg	Anti-HBe
Female	+	+	+	-
Male	+	+	-	+

3.2.1. Comment on the above results. (20 marks)

3.2.2. Discuss further management of these blood donors. (40 marks)

4.

4.1. Elaborate on the methods to detect anti-HLA antibodies. (20 marks)

4.2. How would you manage a potential renal transplant recipient who is sensitized? (30 marks)

4.3.

Patient	HLA	A1-A2	B8-B44	DR3-DR7	O Neg
Sibling 1	HLA	A1-Ax	B8-B44	DR3-DR7	O Pos
Sibling 2	HLA	A1-A2	B8-B44	DR3-DR7	A Neg
Sibling 3	HLA	A1-A2	B7-B44	DR15-DR7	O Neg

4.3.1. Which sibling is the best donor for kidney transplant? Give reasons. (10 marks)

4.3.2. Which is the best donor for bone marrow transplant? Give reasons. (10 marks)

4.3.3. In case of bone marrow transplantation which blood products would you provide in pre, early and late post-transplant phase? (30 marks)

5.

5.1. A primigravida has a sudden vaginal blood loss after a normal delivery, estimated to be about 2 liters. The vital signs show a pulse rate of 100 per minute and BP is 100/70 mmHg. The clinician says that the patient is having oozing from the venepuncture sites.

How would you manage the transfusion requirements of this patient?

(40 marks)

5.2. Draw and describe a normal thromboelastograph, its basic principle and interpretation of abnormal values in diagnosis and appropriate transfusion support.

(50 marks)

5.3. What are the advantages of thromboelastometry over conventional coagulation tests?

(10 marks)

6. A ward medical officer informs you that a 32-year old woman, blood group O negative, has been given blood intended for another patient.

6.1. How would you manage this incident? (65 marks)

6.2. What steps would you take to prevent future errors? (35 marks)

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MD (TRANSFUSION MEDICINE) EXAMINATION - JULY/AUGUST 2018

Date: 31st July 2018

Time: 9.00 a.m. – 12.00 noon

PAPER II

Answer any five (05) questions.

Answer each question in a separate book.

1.

1.1. Define donor haemovigilance and its advantages. (25 marks)

1.2. List localized complications that may occur during blood donation. (10 marks)

1.3. Discuss the mechanism, symptoms and signs, management and prevention of vasovagal reactions in blood donors. (50 marks)

1.4. Briefly discuss the limitation of pre-donation haemoglobin estimation by CuSO₄ method. (15 marks)

2.

2.1. Discuss the value of external quality assessment (EQA) schemes in blood transfusion laboratory practice. (50 marks)

2.2. EQA results in your transfusion laboratory showed an error in red cell antibody screening on the current and previous exercises. Explain how you would proceed and the rationale for your actions. (50 marks)

3.

3.1. A 34-year old woman with ruptured ectopic pregnancy presents with internal bleeding. She is A Rh D positive R₁R₁ K negative with a pan reacting antibody that cannot be resolved quickly. Blood is requested urgently.

3.1.1. How would you select blood for this urgent transfusion and what advice would you give to the clinician? (30 marks)

3.1.2. The reference laboratory subsequently identifies anti-Jk^a antibody underlying the pan reactive auto antibody. Three units of blood have been transfused before this is known. How would you proceed? (35 marks)

3.2. Briefly discuss the clinical significance of the Kidd blood group system (35 marks)

4.

- 4.1. How would you diagnose Transfusion Associated Circulatory Overload (TACO)? (40 marks)
- 4.2. What are the risk factors which can predict TACO? (30 marks)
- 4.3. How would you manage a patient with TACO? (20 marks)
- 4.4. What are the precautions you can take to prevent this complication? (10 marks)

5. You receive a request for a granulocyte transfusion for an O negative patient who had a stem cell transplantation from a B positive donor ten months previously.

- 5.1. What further information would you request before proceeding? (20 marks)
- 5.2. Describe the different sources of granulocytes, dose, administration and duration of transfusion. (35 marks)
- 5.3. What are the precautionary measures to be taken by the transfusion laboratory when providing granulocytes for transfusion? (30 marks)
- 5.4. What precautionary measures need to be taken by the clinician for granulocyte transfusions? (15 marks)

6.

- 6.1. A 56-year old man who has undergone urgent coronary bypass graft surgery following a failed coronary arterial stent procedure has uncontrollable haemorrhage post bypass. He has received streptokinase, the anti-platelet drug abciximab (Gp IIb IIIa inhibitor) and clopidogrel over the preceding six hours. Discuss the appropriate investigations and management. (50 marks)
- 6.2. Discuss the various measures that may be taken to minimize the use of blood transfusion for elective cardiac surgery. (50 marks)