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POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

POSTGRADUATE DIPLOMA IN TRANSFUSION MEDICINE
EXAMINATION – FEBRUARY 2017

Date: 27th February 2017 **Time:** 1.00 p.m. – 4.00 p.m.

PAPER I

Answer all questions.
Answer each question in a separate book.

1. Pre donor information is an important step in blood donation process.

   1.1. Enumerate the information to be provided for potential blood donors. (50 marks)

   1.2. Discuss the importance of donor retention. (20 marks)

   1.3. Discuss strategies to be taken for donor retention. (30 marks)

2.

   2.1. List the advantages and disadvantages of methods used to estimate the haemoglobin level of blood donors in Sri Lanka. (40 marks)

   2.2. Explain the principle of the Copper Sulphate method for estimating haemoglobin level of blood donors. (20 marks)

   2.3. Explain the procedure of the Copper Sulphate method for estimating haemoglobin level of blood donors (40 marks)

3. Two blood donors requested to allocate their donated blood products to close relatives for their transfusion requirements;

   a. 1st donor is a 25 yr old male who wants to allocate his blood products for his wife.
   b. 2nd donor is a 40 yr old male who wants to allocate his blood products for his own sister.

   3.1. Explain the possible reasons for these requests. (20 marks)

   3.2. Explain the reasons for the deferral of these donations in the given situations. (50 marks)

   3.3. Explain the circumstances under which these requests can be accepted. (30 marks)

Contd..../-2

4. A 30 yr old male who sustained a fracture femur and liver laceration, initially received 2 units of group specific uncrossmatched blood. He required 12 units of red cell concentrates, 10 units of FFP, 6 units of Random Donor Platelet Concentrates and 10 units of cryo precipitate during surgery. Approximately five weeks after discharge patient presented to the clinic with yellow sclera. Serological testing for Hepatitis B (HBV) and Hepatitis C (HCV) revealed following results.

   HBS Ag positive,
   Anti HBc negative
   Anti HCV negative

   Liver enzymes markedly elevated consistent with viral hepatitis.
   Patient's physician notified the blood bank.

   4.1. Why is HBV infection considered a Transfusion Transmitted Infection (20 marks)

   4.2. Describe the serological course of acute HBV infection. (30 marks)

   4.3. How would you manage this case as a blood bank Medical Officer? (30marks)

   4.4. What is residual risk? (20 marks)

5.

   5.1. Briefly discuss the serological evaluation of a positive DAT with expected results and their clinical significance (technical details are not expected) (40 marks)

   5.2. Briefly discuss the mechanisms of red cell destruction in following immune mediated haemolytic conditions. (60 marks)

      i. Warm Auto immune haemolytic anaemia
      ii. ABO incompatibility
      iii. Cold Auto immune haemolytic anaemia
      iv. Paroxysmal cold haemolytic anaemia

Contd..../-3

6. Three (03) units of B Rh D positive RBC was used to prime Heart-lung machine for a CABG patient who was grouped as B Rh D positive.
4 units of FFP and 10 units of platelets were transfused during surgery and haemoglobinuria was detected after transfusion.
2nd sample received for cross match, was grouped as A_2B Rh D positive. Cross match was incompatible with a negative antibody screen.

6.1. How would you select blood for immediate transfusions? (10 marks)

6.2. What blood group should be selected for further platelet transfusions? (10 marks)

6.3. What are the possible causes for this error? (20 marks)

6.4 How would you investigate this incident? (20 marks)

6.5. If the error occurred from clinical side, what measures you would implement to prevent similar occurrences in future? (40 marks)

7. A pregnant woman (P_2C_1) whose blood group is O Rh D Negative attends the antenatal clinic for the first time at a POA of 24 weeks. She reveals that she had a mild vaginal bleed at POA of 8 weeks.

7.1. Enumerate what you would want to know regarding her past obstetric history. (25 marks)

7.2. Enumerate what you would want to know regarding the present pregnancy (25marks)

7.3. Describe how you would monitor the present pregnancy (50 marks)

Contd..../-4

8. You are the In-charge Medical officer, in a Regional Blood Centre. There were few case referrals requesting platelet transfusions within a period of two weeks. Three such cases are as follows;

Patient 1

Obese, 43 years, mother of 2 children, was on 2nd cycle of Chemotherapy for Acute Myeloid Leukaemia. She was admitted with gum bleeding and haematuria 5 days ago.Two units of A Rh D positive Red cell concentrates were transfused on Day 1 & 3 and 6 units of random donor platelet concentrates (both A Rh D positive and B Rh D positive) were given daily. Chemotherapy was stopped on Day 1. On day 6, Full Blood Count (FBC) showed Hb 8.9g/dl, Platelet count 3×10^9 /L. WBC 1×10^9/L. Coagulation tests were normal throughout. She continued to have gum bleeding, and haematuria to a lesser degree than on Day 1.

Patient 2

A previously healthy male weighing 70 Kg, admitted following a road traffic accident. He was waiting for surgery. His Hb was 12.5 g/dl, Platelet count 50×10^9 /L. All other basic investigations were normal. He was transfused with 6 units of random donor platelet concentrates daily on 2 consecutive days. He was referred on day 3 with Hb 12.0 g/dl and Platelet count 60×10^9 /L.

Patient 3

A woman at 35 weeks POA in her 2nd pregnancy was admitted in impending eclampsia and LSCS was planned. Her Hb was 12.5 g/dl, Platelet count 30×10^9 /L with normal all other basic investigations. She was transfused with 12 units of random donor platelet concentrates on two occasions. Her post transfusion Hb 13 g/dl, Platelet count 40×10^9 /L.

Outline **a common approach** to manage these types of situations. (100 marks)