Chapters 13-14 old papers
Haematopoieitic System:

2 chapters for 4 MCQ marks. (6%)

1. Myelofibrosis
(a) causes leukoerythroblastic anaemia
(b) causes a decrease in megakaryocytes
(c) stimulates erythropoietin production
(d) is ameliorated by extramedullary haematopoiesis
(e) causes hyposplenism

2. A man with type B blood
(a) has the commonest blood type
(b) cannot have a child with O type blood
(c) cannot have a child with AB type blood
(d) cannot have a child with type A
(e) none of the above is true

3. Regarding Rhesus incompatibility (2006)
(a) 50% of Caucasians are rhesus positive
(b) requires CDE to be positive (requires absence of CDE to be negative, 2006)
(c) there are low levels of autoantibodies to AB
(d) anti D is most antigenic
(e) Agglutinins rarely occur spontaneously

4. Thrombocytopaenia
(a) occurs commonly in HIV
(b) causes spontaneous bleeding at levels of 90,000/μL
(c) occurs with hyposplenism
(d) is related to platelet survival in PND
(e) is not associated with megaloblastic anaemia

5. Macrocytic [megaloblastic] anaemia occurs in all the following conditions EXCEPT (2000)
(a) pregnancy
(b) folate/vitamin B_{12} deficiency
(c) EBV infection
(d) neoplasm
(e) hyperthyroidism

6. Non-thrombocytopaenic purpura is associated with
(a) aplastic anaemia
(b) SLE
(c) meninococcaemia
(d) HIV
(e) EBV

7. Which cell type is found predominantly in the periarteriolar sheaths in the white pulp of the spleen? (2004)
(a) B lymphocytes
(b) Neutrophils
(c) Mast cells
(d) T lymphocytes
(e) Macrophages

8. Iron deficiency results in
(a) increased serum ferritin
(b) decreased transferrin saturation
(c) decreased total iron binding capacity
(d) reduction in skin shedding and therefore iron loss
(e) decreased transferrin levels

9. Regarding iron metabolism (?2004, 2006)
(a) Iron excretion is tightly regulated
(b) Iron absorption is increased by ascorbic acid
(c) 2% of heme iron is absorbed
(d) Ferritin is found only in the liver, spleen and bone marrow
(e) none of the above is true

10. Regarding iron which of the following is incorrect (?2004)
(a) absorption is increased by ascorbic acid
(b) most is found in myoglobin
(c) most is absorbed in the duodenum
(d) women have smaller iron stores than men
(e) transferrin is usually 33% saturated

Answers:

1. Myelofibrosis p701

(a) causes leukoerythroblastic anaemia

(b) causes an ***increase in the numbers of large clustered megakaryocytes***

(c) stimulates erythropoietin production (not mentioned)

*(d) is not ameliorated by extramedullary haematopoiesis, as it is disordered and ineffectivve

*(e) causes ***hypersplenism***, 2nd ary to extramedullary haematopoiesis

Preceded by CML, polycythaemia vera, or idiopathic. Marked fibrosis is evident on marrow bx. Often pts are thombocytotic, but then as the disease progresses, thrombocytopaenia is common.

2. A man with type B blood (Guyton p413-4)

(a) ***O is the commonest blood type*** (47%), A 41%, B 9%, AB, 3%

(b) ***can*** have a child with O type blood ***(refer mendelian genetics, mother O)***

(c) ***can*** have a child with AB type blood ***(refer mendelian genetics, mother A or AB)***

(d) ***can*** have a child with type A ***(refer mendelian genetics, mother A or AB)***

(e) ∴ none of the above is true

3. Regarding Rhesus incompatibility (Guyton 10th p415)

(a) ***85%*** of Caucasians are rhesus positive, 95% Afro-American, and 100% Africans

(b) requires D to be positive. Six common antigen C,D,E, and c,d,e. A person who has a capital Rh factor C cannot have a lower case one (c).

(c) there are low levels of autoantibodies to AB

(d) anti D is most antigenic, so a person is considered +ve if they have D: C and E Rh produce milder reactions

*(e) Agglutinins form soon after birth to ***ABO antigens***, continued exposure is required for Rh agglutinins to occur (eg blood transfusions, erythroblastosis fetalis)

4. Thrombocytopaenia p650-1

(a) is the most common haematologic manefestation of HIV infection

(b) causes spontaneous bleeding at levels of ***20,000/μL***. <100,000/μL is thrombocytopaenic

(c) occurs with ***hyper***splenism ***(sequestration)***

(d) is related to platelet survival in PND (?what this is ?paraneoplastic disease)

(e) is ***associated with megaloblastic*** anaemia causes poor development and increased destruction of megakaryocytes

Caused by decreased production (aplastic anaemia, leukaemia, B12 deficiency), decreased platelet survival (immune targets IIb-IIIa; non-immune prosthetic heart valves, hypertension), increased consumption, dilution (massive transfusion), or sequestration (spleen)

5. Macrocytic [megaloblastic] anaemia occurs in all the following conditions EXCEPT (2000) Table 13-5 p640

(a) pregnancy ***(causes folate and/or B_{12} deficiency)***

(b) folate/vitamin B_{12} ***deficiency is the cause of megaloblastic anaemia***

(c) EBV infection not on table

(d) neoplasm ***(causes folate and/or B_{12} deficiency)***

(e) hyperthyroidism ***(B_{12} deficiency)***

6. Non-thrombocytopaenic purpura is associated with p650
(a) aplastic anaemia ***(thrombocytopaenic)***
(b) SLE
(c) meningococcaemia, septicaemia, infective endocarditis, some rickettsiae
(d) HIV
(e) EBV
drug reactions (drug induced antibodies, leading to vascular deposition of antibody), scurvy and Ehlers-Danlos syndrome, Cushings syndrome, HSP (IgA), amyloid

7. Which cell type is found predominantly in the periarteriolar sheaths in the white pulp of the spleen? (p703, chapter 14)
(a) B lymphocytes ***are in intervals of lymphatic sheath expansions of lymphoid nodules on one side of the artery***
(b) Neutrophils
(c) Mast cells
(d) T lymphocytes
(e) Macrophages

8. Iron deficiency results in p644-5,
(a) ***decreased*** serum ferritin and is ***always below 12μg/L***
(b) decreased transferrin saturation (not stated, but true)
(c) ***increased total iron binding capacity, as the transferrin saturation drops from normal (33%) to provide Fe^{2+} to cells***
(d) skin shedding and therefore reflects an insensible iron loss. Iron excretion is not regulated
(e) ***increased*** serum transferrin
Features: Decreased serum ferritin, raised serum transferrin, MCV reduced, bone marrow Fe^{2+} stores. Ferritin acts as slow release iron

9. Regarding iron metabolism (? 2004) p643-4
*(a) There is ***NO*** regulated pathway for iron excretion
(b) Iron absorption is increased by ascorbic acid (vitamin C)
*(c) ***20% of haem iron is absorbed***, while 1-2% of non-haem iron is absorbed
*(d) Ferritin is ***found in all tissues***, but in higher quantities in the liver, spleen, skeletal muscle and bone marrow
*(e) none of the above is true ***(wrong)***

10. Regarding iron which of the following is incorrect (?2004)
(a) absorption is increased by ascorbic acid
(b) most is found in ***haemaglobin (80%)***
(c) most is absorbed in the duodenum
(d) women (400mg) have smaller iron stores than men (1000mg)
(e) transferrin is usually 33% saturated with iron