The Royal College of Pathologists
Pathology: the science behind the cure

Part 1 examination

Haematology: First paper

Tuesday 25 September 2018

Candidates must answer all questions. Each question is worth a total of 25 marks.

Time allowed: 3 hours

1.Discuss current developments in haemophilia A and B therapy and highlight in your answer any perceived benefits and limitations to these approaches.

2.The investigation of anaemia in a 40 year old male: Discuss the classification of anaemias and appropriate diagnostic investigations and therapy.

3. Monoclonal B-cell lymphocytosis : diagnosis, natural history, and risk stratification.

4.A novel assay for analyte x has been developed: describe how you would validate this assay for diagnostic use and what would you do in the absence of an EQA scheme?

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Part 1 examination

Haematology Clinical Science: First paper

Tuesday 26th September 2017

Candidates must answer ALL questions

Time allowed: Three hours

Question 1: Management

Discuss the advantages and the pitfalls of setting up an integrated diagnostic service for haematological malignancies.

Question 2: Haem-Oncology

Discuss, using chronic myeloid leukaemia as an example, how the molecular monitoring of acquired resistance / disease relapse, can aid patient management?

Question 3: General Haematology

Describe the pathophysiology and the molecular basis of Haemochromatosis. Discuss clinical management and relevance of the most common variants.

Question 4: Haemostasis and Thrombosis

A 22 year old student is referred to an outpatient clinic several weeks after presenting to A&E with prolonged severe epistaxis (several episodes over a 24 hour period each lasting in excess of 30 mins). This has happened before, requiring packing and cauterisation. She reports a personal history of menorrhagia since her early teens and family history of unexplained bruising (investigated for Von WIllebrands disease with no significant findings). She has had no other significant haemostatic challenges. Her out-patient FBC was unremarkable apart from a thrombocytopenia (50 X 10^9/L) and PT and APTT were both within the normal range.

Briefly outline appropriate investigations and potential diagnoses, and describe how you would propose to investigate the cause of this apparent bleeding disorder.

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Part 1 examination

Haematology for Clinical Scientists: Essay paper

Tuesday 20 September 2016

Candidates must answer ALL questions

Time allowed: Three hours

Question 1: Haem-Oncology

A 70 year old presents to the new patient clinic with a 6 month history of lymphadenopathy in neck and groins. He complains of increasing tiredness and weight loss of 6kg in the last three months. He was admitted to hospital 2 weeks ago with pneumonia which is when the raised white cell count was first noticed. The investigations below have been performed. The patient has come to clinic today for the results of the investigations and a treatment plan.

Investigations:

- Hb 98g/L, White cell count $94x10^9$/l, platelets $85x10^9$/L, neutrophils $1.4x10^9$/L
- Flow cytometry markers (Positive > 30% of cells positive): CD5 pos, CD 19 pos, CD20 pos, CD22 pos, CD23 pos, CD43 pos, CD11c weak pos, CD 10 neg, FMC7 neg CD 79b neg
- CT scan: widespread lymphadenopathy with nodes both above and below diaphragm, no compromise of other organs currently, largest group 6 x 4.2cm in the para-aortic region
- Cytogenetics are outstanding.

Discuss the diagnosis based on the information given. Discuss the advantages and/or limitations of karyotyping and FISH for investigation of acquired cytogenetic aberrations in this patient. Discuss how acquired cytogenetic aberrations found in this patient should inform management decisions. Discuss how other prognostic features and patient specific factors such as co-morbidities would impact on therapeutic recommendations?

Question 2: General Haematology

Outline the principles of the common laboratory tests used to investigate B12 and folate deficiency.

Prepare a guideline for GPs to make best use of these tests to include:

- Definite indications for testing
- Target groups for screening
- Issues for interpretation of the test results
- Treatment of B12 deficiency

Question 3: Transfusion medicine

A 32 year old woman with sickle cell disease is found at antenatal screening to be Group O R^2r with anti-U present.

What are the possible transfusion-related complications which might arise during this pregnancy and post delivery, and discuss how the hospital blood bank could provide appropriate support?

Question 4: Haemostasis and Thrombosis

Describe the principles of light aggregometric analysis of platelet function and the normal patterns of response obtained. Explain, using examples, how this can be used to diagnose the major hereditary platelet disorders.