Haematology Quiz

Journal of the Ceylon College of Physicians, 2014, 45, 49-50

1. A 19-year-old female, previously well, presents with symptoms of anaemia and yellow discolouration of eyes following a short febrile illness.

This is her peripheral blood film.

- 1.1 What is the likely diagnosis/differential diagnoses?
- 1.2 What investigations would confirm the above?

2. A 70-year-old male is investigated for "feeling tired". FBC report revealed,

Hb : 80g/l

WBC : $280 \times 10^9/l$

Platelets : $180 \times 10^9/l$

This is his peripheral blood film

- 2.1 What is the most likely diagnosis?
- 2.2 What single investigation will confirm the diagnosis?

3. A 50-year-old male is investigated for peripheral neuropathy. He is a non-vegetarian and non-smoking teetotaler. He is normoglycaemic. Serum protein electrophoresis reveals a "m protein" of 8g/l in the gamma region. Bone marrow aspirate and trephine biopsy are normal. Cranio-spinal MRI shows no abnormalities of bone or soft tissue. His renal and liver profiles, serum calcium and electrolytes are normal.

X-rays of his femora are shown.

- 3.1 What is the most likely diagnosis?
- 3.2 What further investigations would you do?
- 3.3 What is the treatment for this condition?

4. A 16-year-old male presented with priapism about 4 hours after its onset. Examination revealed rigid and tender corpora with a flaccid glans. A photomicrograph of his blood film is provided.
- What are the abnormalities in the blood film?
 - What is the most likely cause of priapism?
 - What investigation would confirm the diagnosis?
 - How would you manage this patient?

5. An 18-year old female investigated for abdominal pain was found to have portal vein thrombosis. Her FBC revealed a normocytic anaemia. The result of one of the investigations performed is provided.
- What is the investigation?
 - What is the diagnosis?
 - Name a drug licensed for use in this condition.

(Answers on page 60)

Answers to Haematology Quiz

1.
 - 1.1 Spherocytic haemolytic anaemia (spherocytes and polychromatic cells). Hereditary spherocytosis (HS) or autoimmune haemolytic anaemia (AIHA) – warm type.
 - 1.2 A positive direct Coombs test will confirm AIHA. Although a family history of HS is useful, cryohaemolysis test or EMA binding test are recommended screening tests for HS. Osmotic fragility test will be positive in both HS and AIHA and therefore is not discriminatory.
2.
 - 2.1 Chronic lymphocytic leukaemia (mature lymphocytosis and many smudge or smear cells)
 - 2.2 Immunophenotyping by flowcytometry must demonstrate at least $5 \times 10^9/l$ of B cells in the peripheral blood with the “CLL phenotype” (CD5 positive, CD23 positive, FMC7 negative, CD79b negative/weak, Surface membrane Ig weak) to make a diagnosis of CLL.
3.
 - 3.1 A solitary plasmacytoma of bone (a large “lytic lesion” in the upper end of the left femur)
 - 3.2 A biopsy from the “lesion” for histology to confirm the presence of abnormal/clonal plasma cells.
 - 3.3 Imaging to exclude any other similar lesions.
 - 3.4 Radiotherapy
4.
 - a) Target cells and sickle cells
 - b) Sickle cell/ Hb C disease
 - c) Haemoglobin HPLC will confirm the presence and quantity of HbS and HbC
 - d)

Management Algorithm for Priapism

5.
 - a) **Flowcytometry** of peripheral blood for CD55 and CD59. These are glycosylphosphatidylinositol (GPI) anchored proteins on the surface of red cells.
 - b) **Paroxysmal nocturnal haemoglobinuria**: there is a population of red cells (yellow) which do not express both CD55 and CD59, these are also referred to as type III cells. There is also a population of normal red cells (blue) that express both CD55 and CD59. These are referred to as type I cells.
 - c) **Eculizumab (Soliris)** is a terminal complement inhibitor. More recently used also in atypical haemolytic-uremic syndrome (*N Engl J Med* 2013; **368**: 2169-181)

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