



HAEMBASE

Mock FRCPATH Part 2 Morphology Paper November 2022

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Please answer all questions

Time Allowed: 90 minutes

Normal ranges for purposes of this test:

Haemoglobin (Hb) 130-150

Mean Cell Volume (MCV) 83-100

Mean Cell Haemoglobin (MCH) 27-32

Platelets (Plt) 150-400

WBC 4-10

Neutrophils 2-7

Lymphocytes 1-3

Monocytes 0.2-1

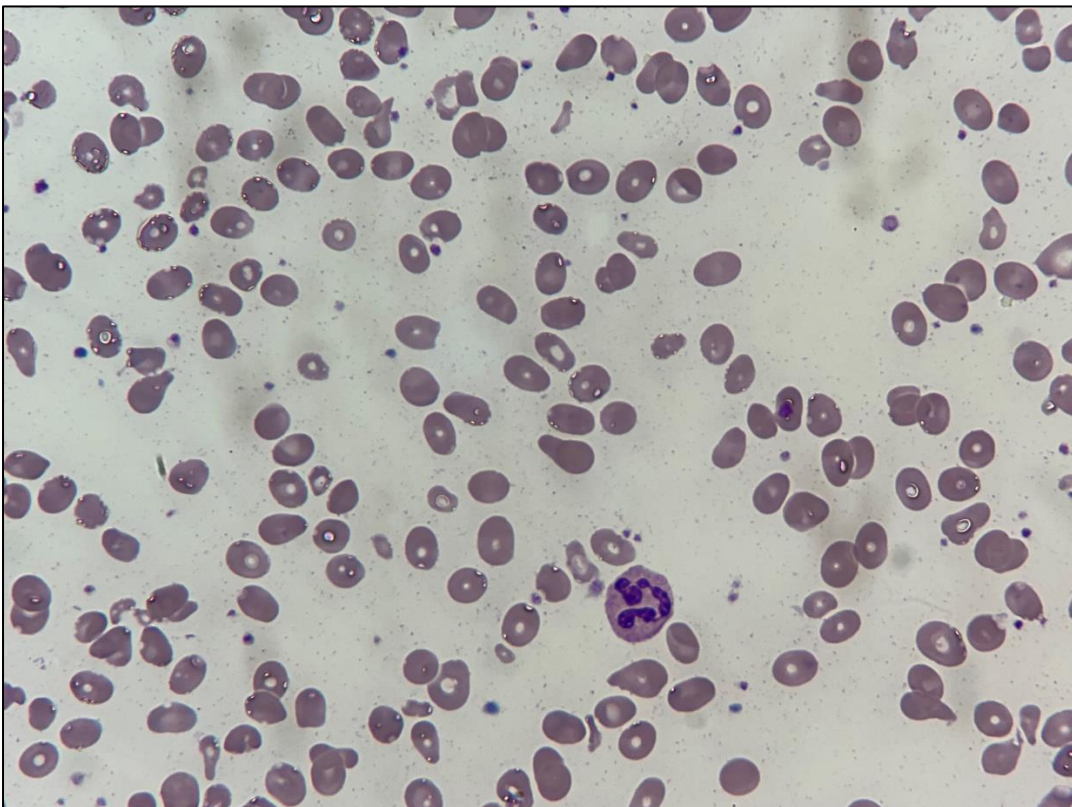
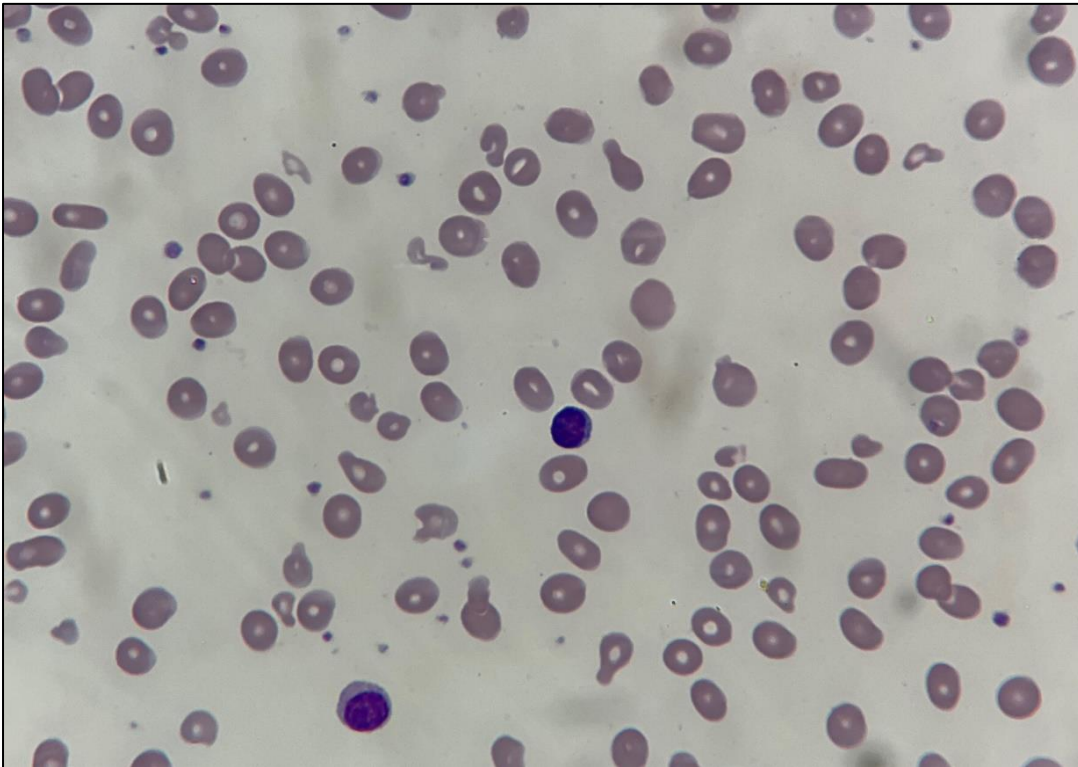
Eosinophils 0.02-0.5

Creatinine <120

Ferritin >30

Question 1. A 25-year-old woman presents to her GP with two weeks of breathlessness, chest pain and tachycardia on walking. She has no past medical history. Her only medication is the combined oral contraceptive pill.

Hb 49, WBC 3.8, Plt 355, Neut 2.3



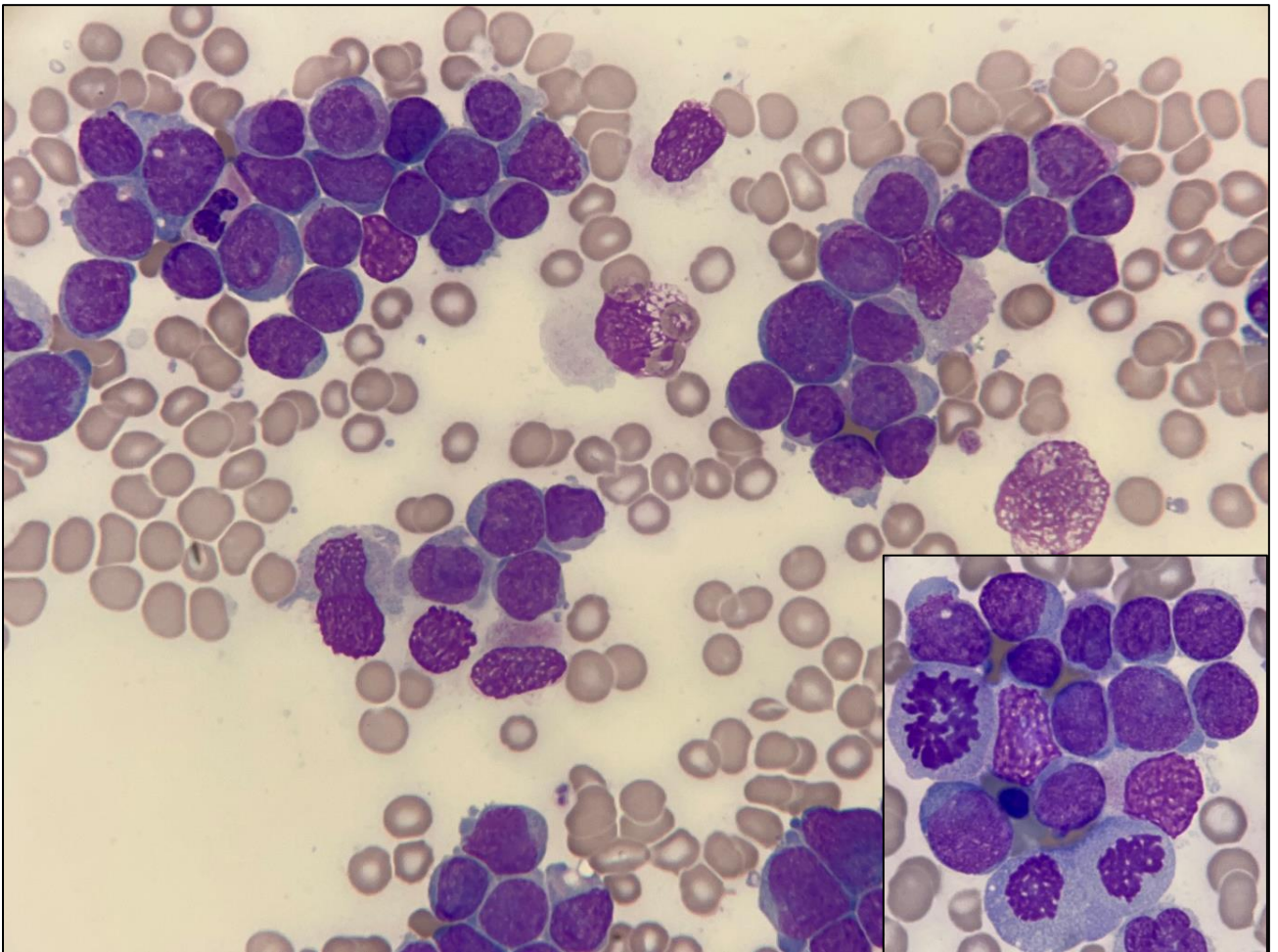
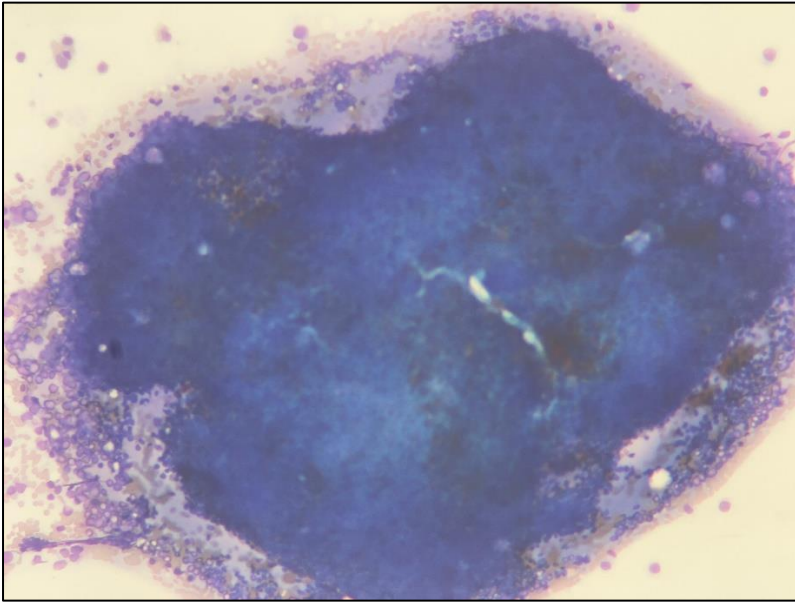
a. Report the blood film (3 marks)

b. State your preferred diagnosis, or a short differential (1 mark)

c. List three further tests you would request (3 marks)

Question 2. An 80-year-old woman presented to the emergency department with five days of fever and lethargy.

Hb 105, WBC 53, Plt 43, Cr 184



a. Briefly report the bone marrow aspirate (3 marks)

b. Immunophenotyping (flow cytometry) is performed. On the basis of this phenotype, state the one additional test that is most urgently required (1 mark)

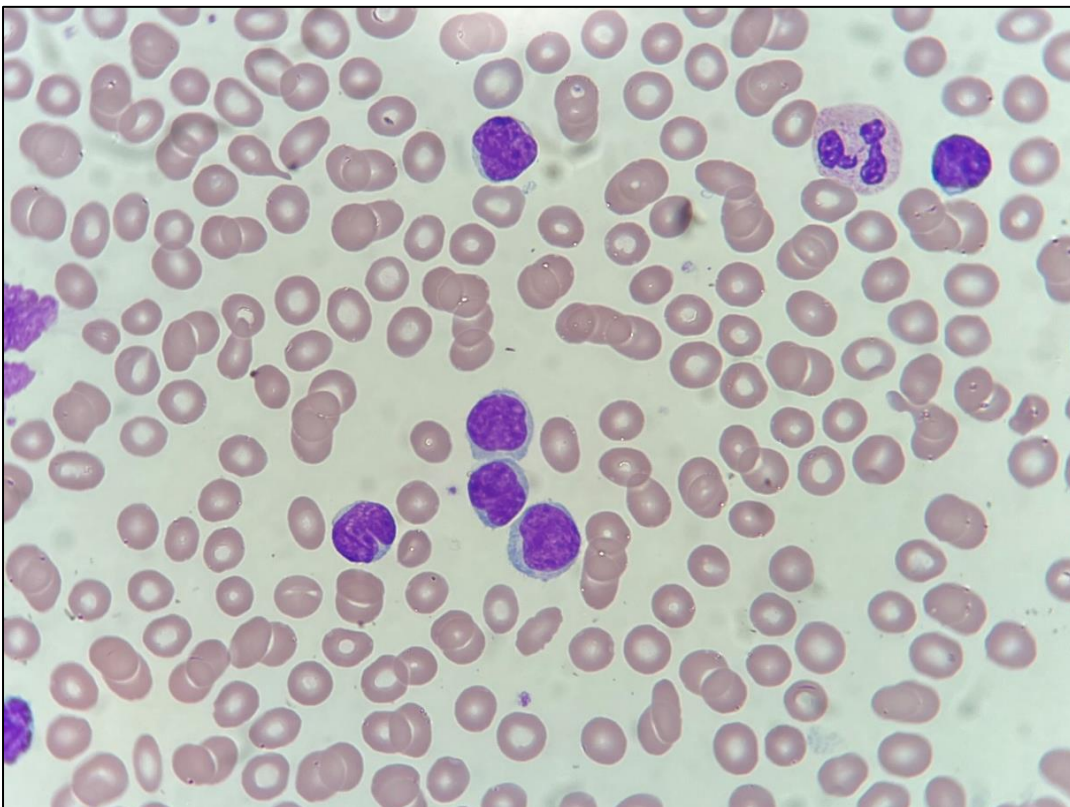
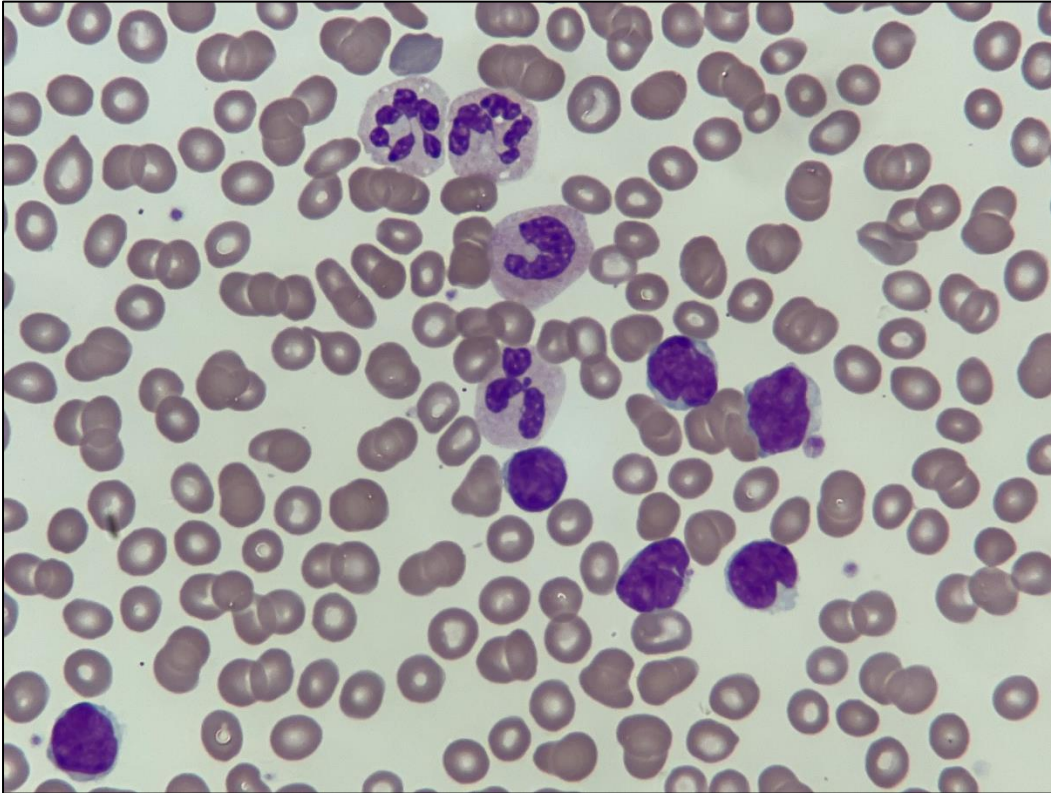
CD13+, CD33+, CD64+, CD117+, MPO+
CD34-, HLADR-, CD2-, CD19-

c. Give one example each of a favourable, intermediate and adverse risk genetic abnormality seen in acute myeloid leukaemia (3 marks)

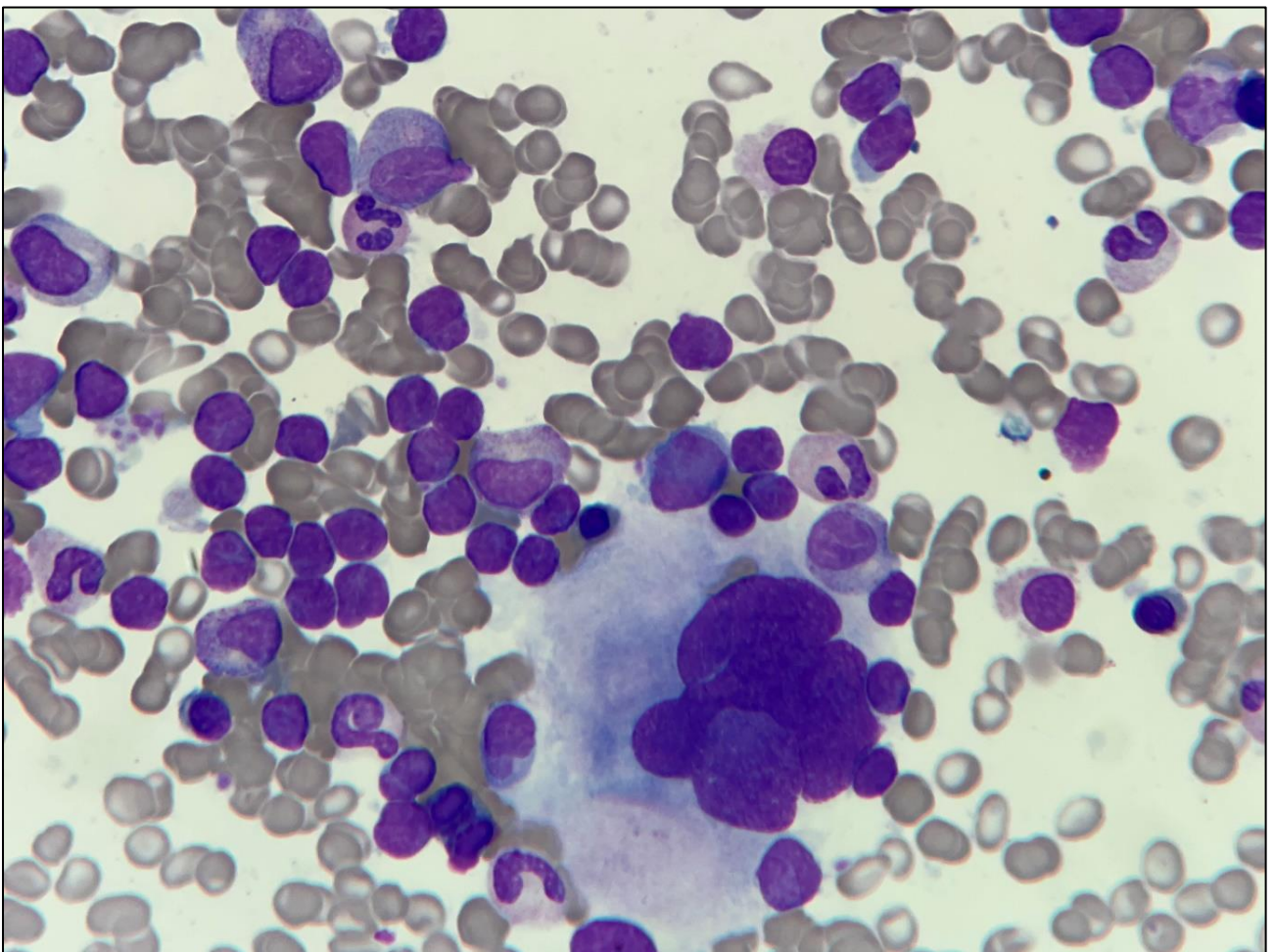
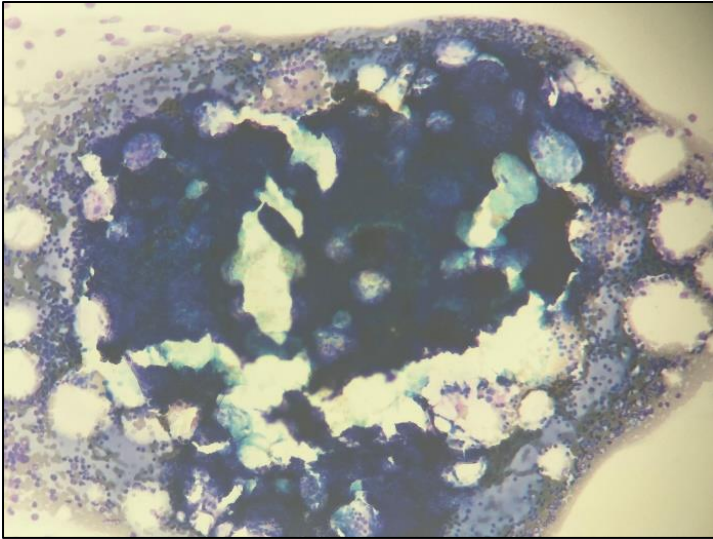
Question 3. A 70-year-old woman presents to her GP with 3 months of progressive lethargy and loss of appetite. On examination there is massive splenomegaly. No palpable lymphadenopathy.

Hb 107, WBC 43, Plt 91

Peripheral Blood Film:



Bone Marrow Aspirate:



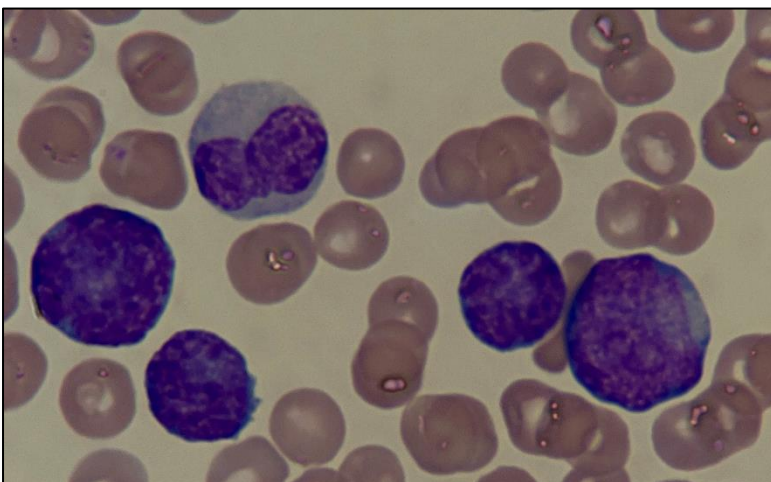
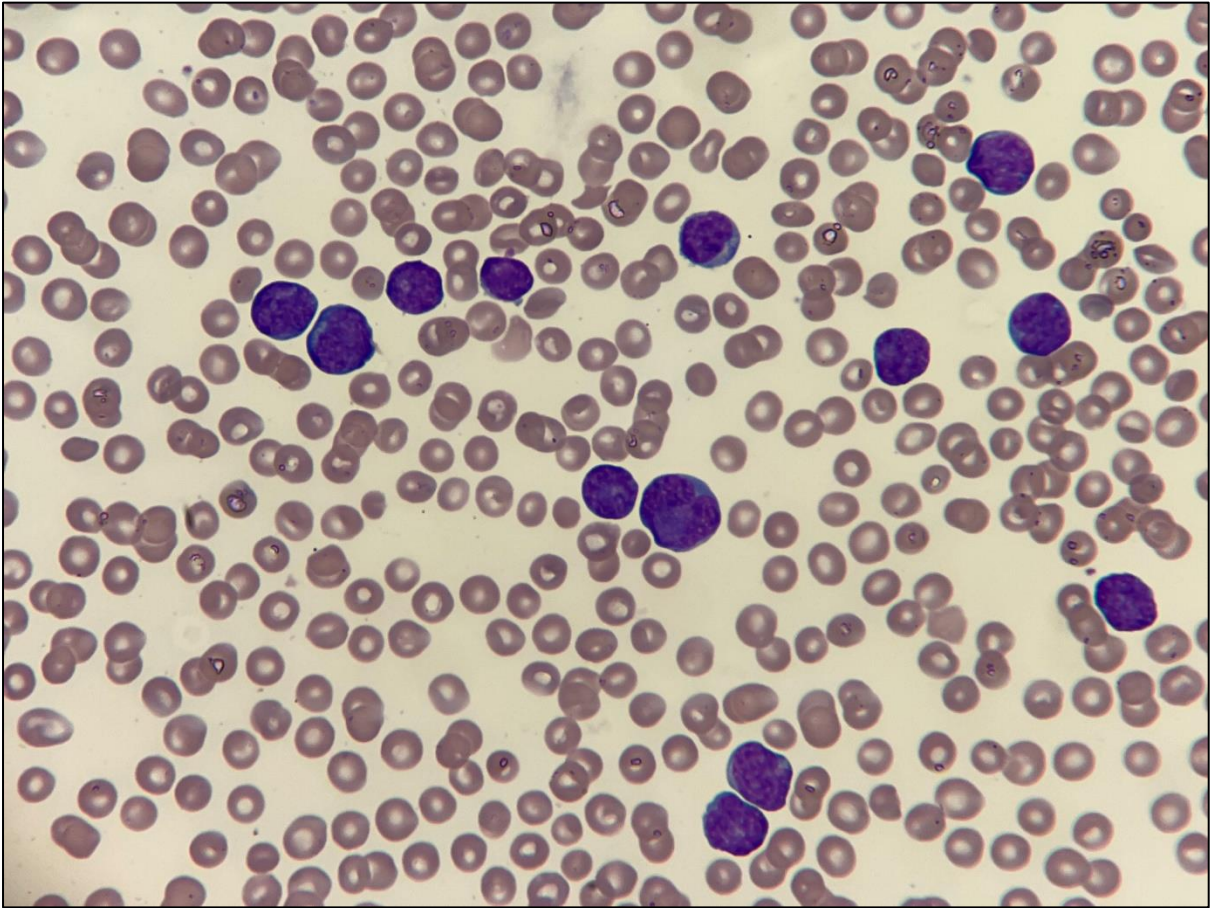
a. Report the blood film (3 marks)

b. Briefly report the bone marrow aspirate (3 marks)

c. State your preferred diagnosis along with any relevant differentials (2 marks)

Question 4. A two-year-old boy presents to the emergency department for the third time with a limp and right hip pain.

Hb 108, WBC 145



a. Report the blood film (3 marks)

b. Immunophenotyping (flow cytometry) of the peripheral blood is performed. What is the diagnosis? (2 marks)

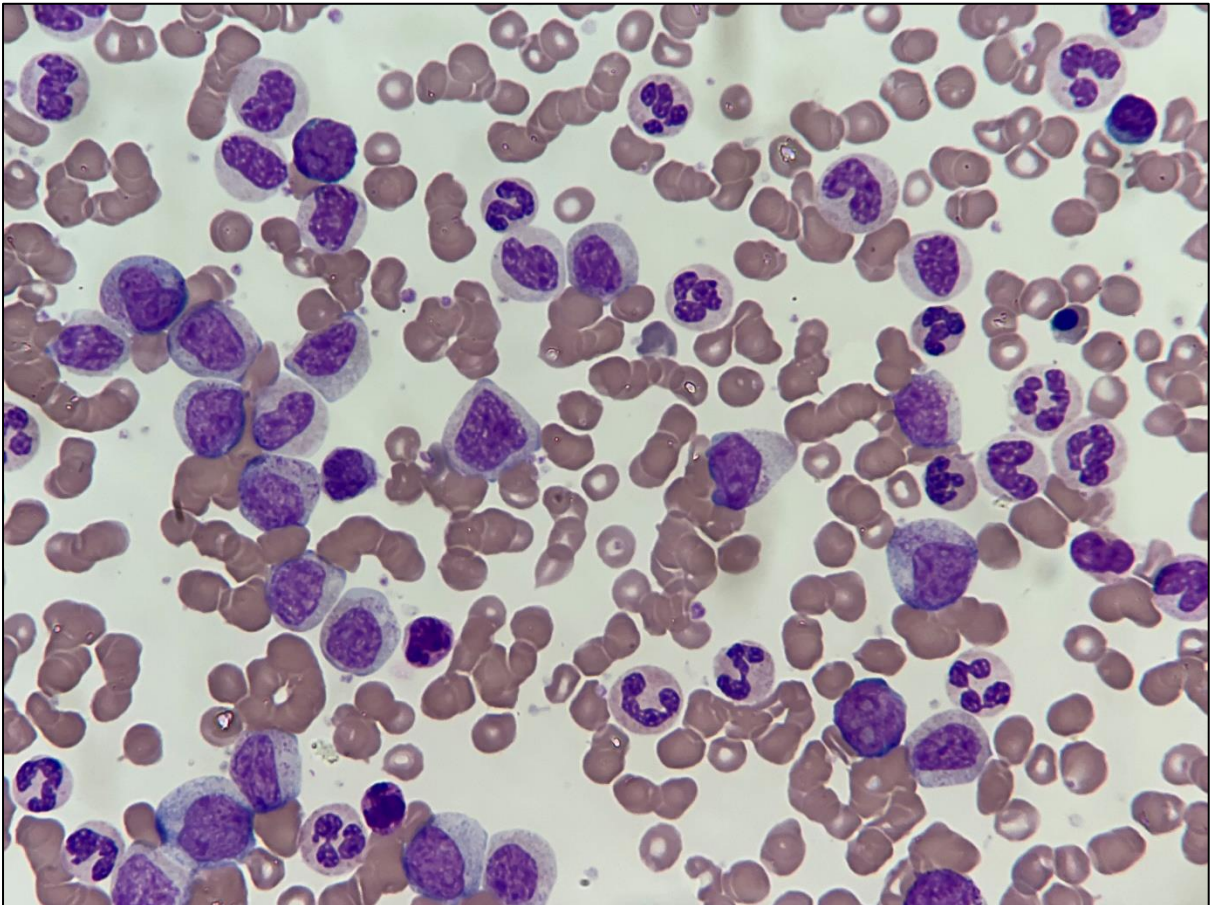
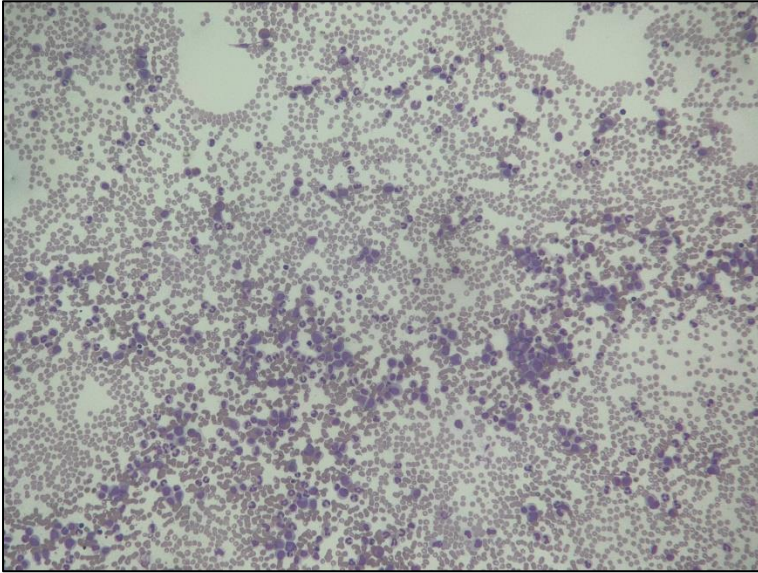
CD19+, CD79a+, CD22+
MPO-, CD2-, CD10-, surface Ig-

c. Give one reason dexamethasone is preferred to prednisolone in this condition (1 mark)

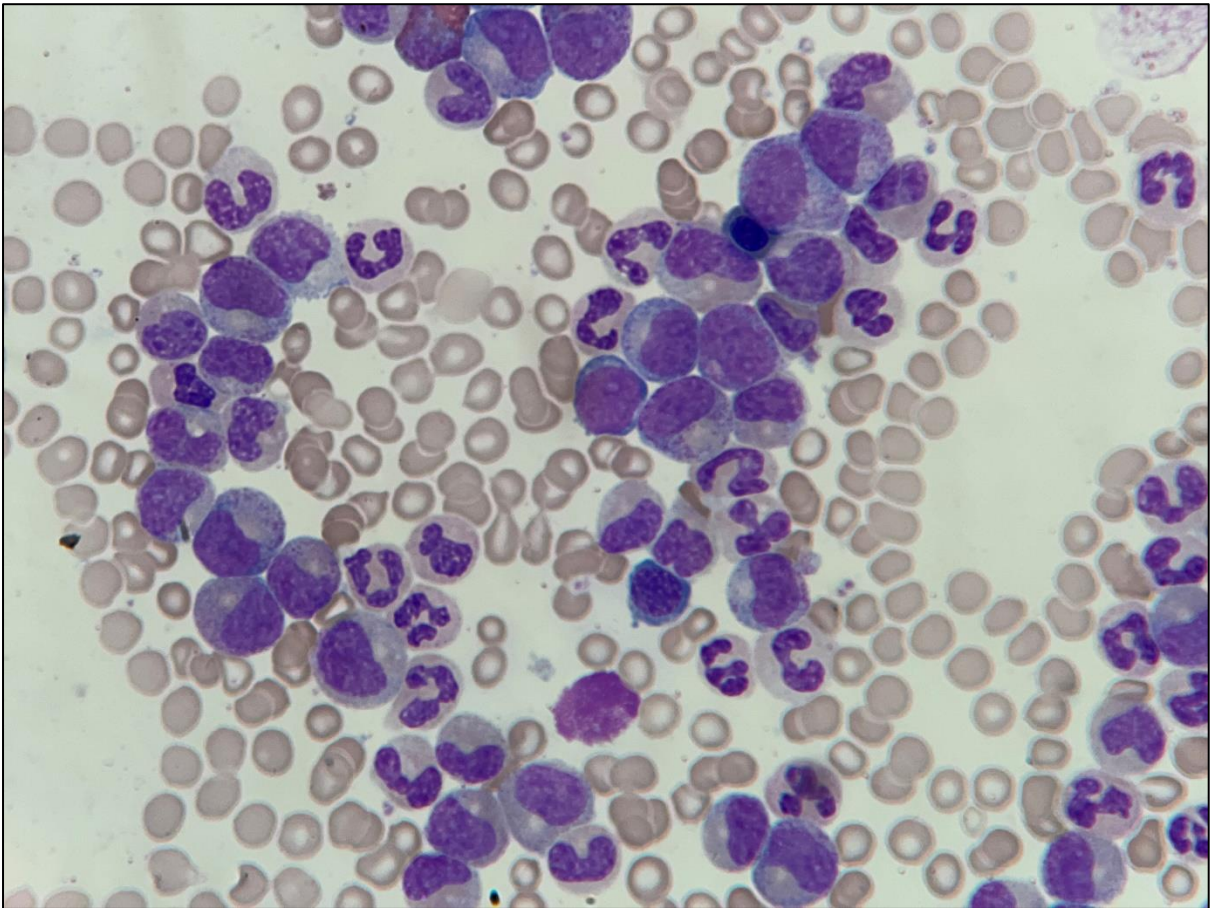
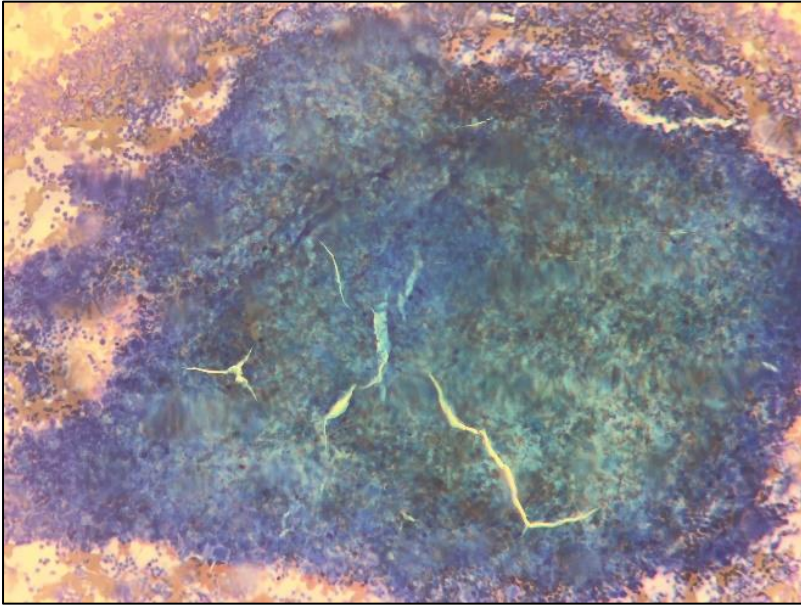
Question 5. A 55-year-old man is seen in the haematology clinic with an eight-week history of headache and visual blurring. Examination revealed right sided retinal haemorrhage and palpable splenomegaly.

Hb 110, WBC 200, Plt 400

Peripheral blood:



Bone marrow aspirate:



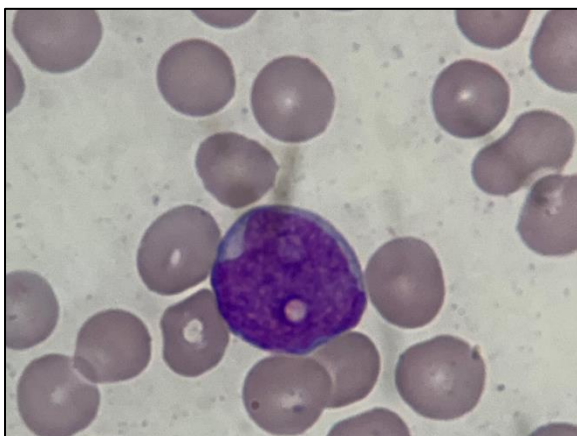
a. Report the blood film (3 marks)

b. Briefly report the bone marrow aspirate, along with your preferred diagnosis (4 marks)

c. Asciminib is approved in the UK as 3rd line therapy in patients with this condition. What is the mechanism of action for asciminib? (2 marks)

Question 6. An 80-year-old man is under haematology review for a recent finding of leukocytosis with neutropenia. On examination he has raised, red skin nodules present on his head, face and upper chest.

Hb 74, WBC 35, Plt 97



a. Report the blood film (3 marks)

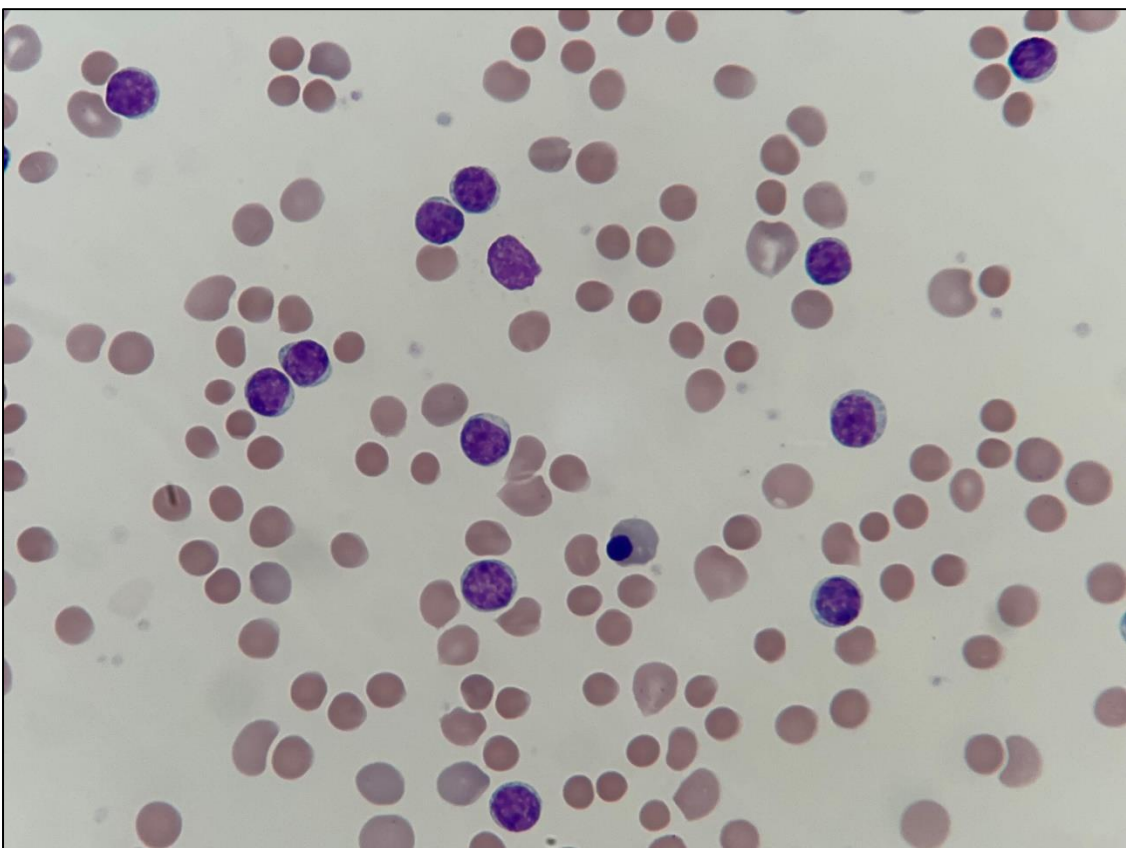
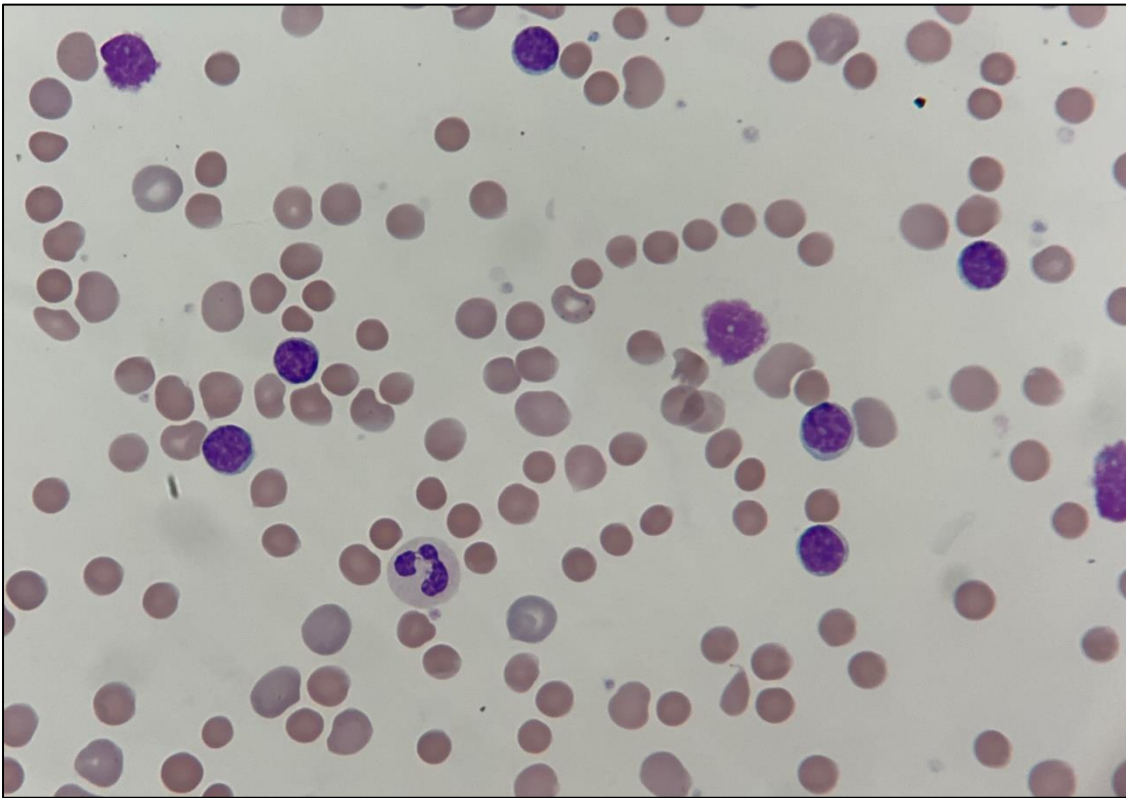
b. Immunophenotyping (flow cytometry) of the peripheral blood is performed. What is the diagnosis? (1 mark)

CD123+, CD4+, CD56+, CD33+
CD34-, CD2-, CD3-, CD13-, MPO-

c. Briefly state the normal healthy function of the cell of origin in this disorder (2 marks)

Question 7. A 70-year-old woman known to haematology clinic presents to the emergency department with lethargy and breathlessness.

Hb 50, WBC 150, Plt 175



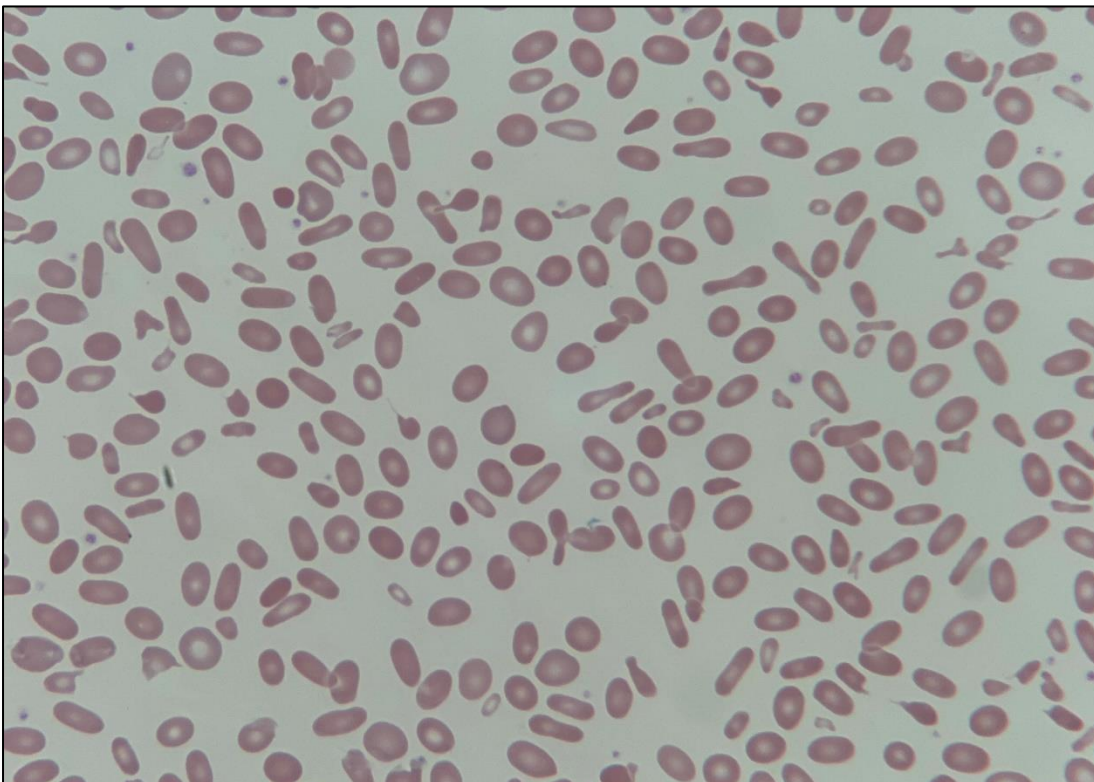
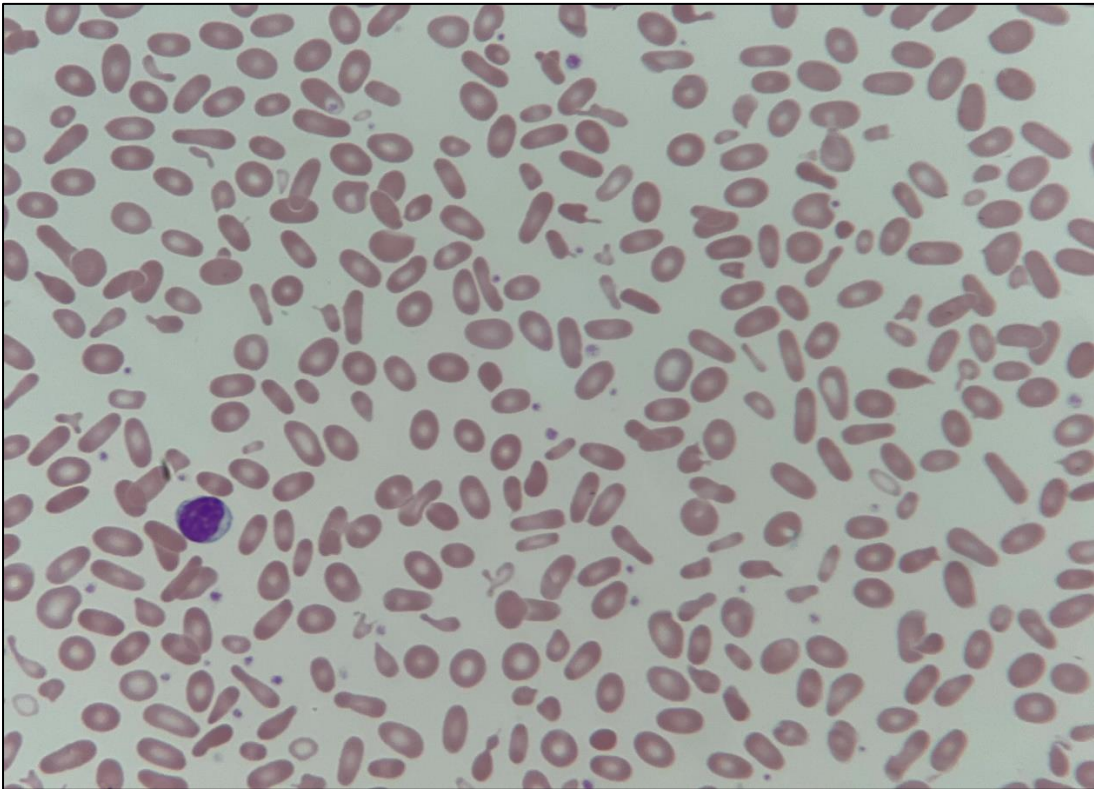
a. Report the blood film (3 marks)

b. State your preferred diagnosis (2 marks)

c. Briefly outline the principle of performing a direct antiglobulin test (Coombs) (3 marks)

Question 8. A 35-year-old man attends his GP with right upper quadrant pain. He is usually fit and well. He reports a healthy, mixed diet and no symptoms to suggest blood loss. A full blood count is performed.

Hb 109, MCV 72, MCH 25, WBC 6.3, Plt 518

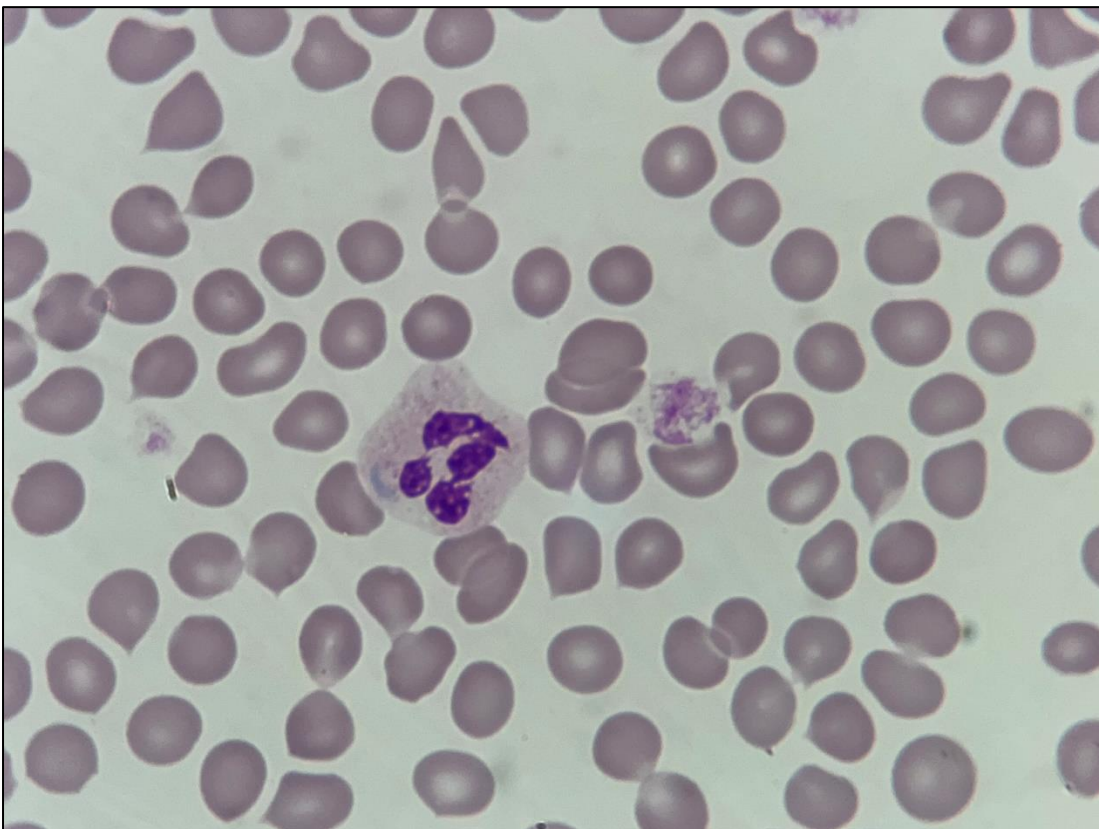
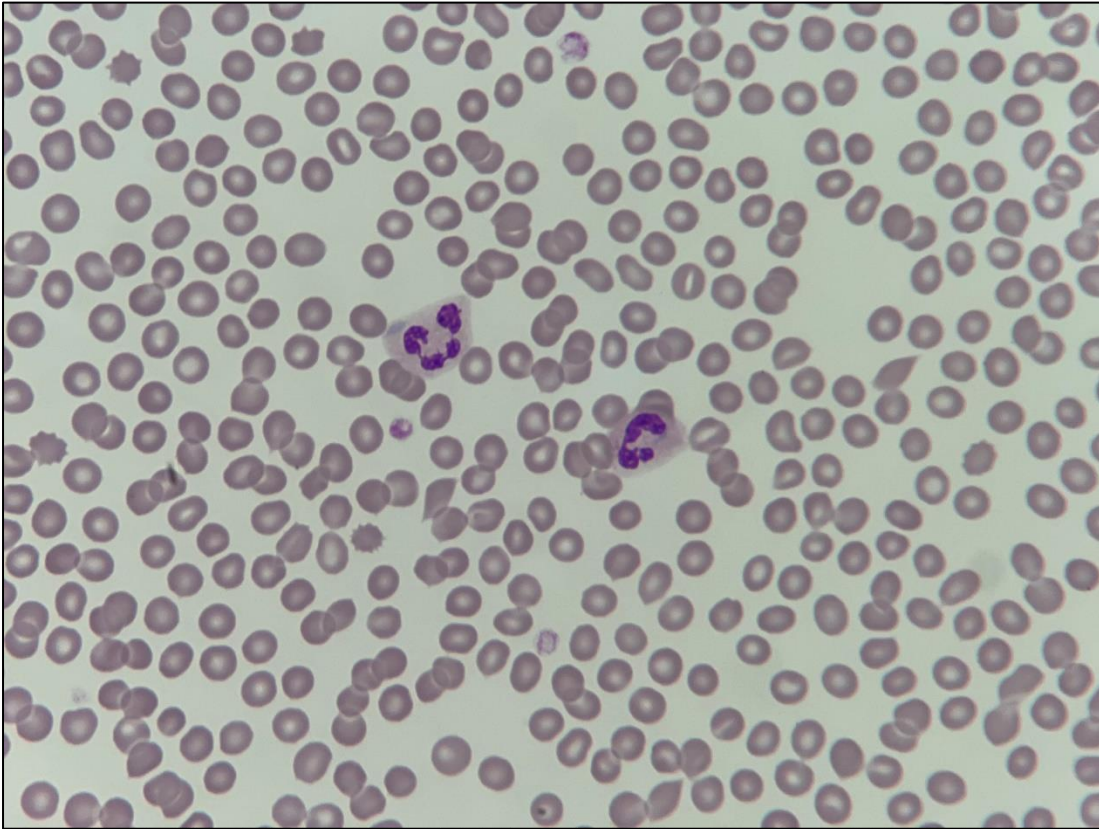


a. Report the blood film (3 marks)

b. What test(s) would you perform next to investigate the red cell changes? (2 marks)

c. Provide your preferred diagnosis, or differential diagnosis (3 marks)

Question 9. A 35-year-old woman attends the haematology clinic for routine follow-up. Since her last appointment she has been seen in audiology and fitted with bilateral hearing aids. She is also under regular review in the nephrology clinic. Her mother is similarly affected.

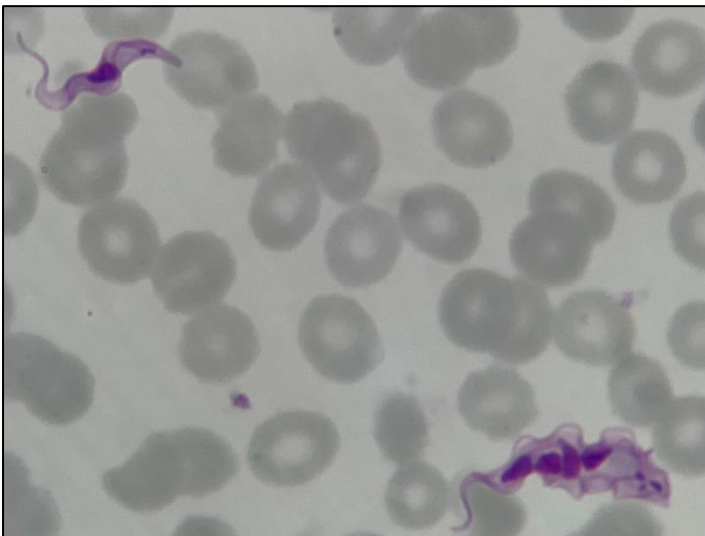
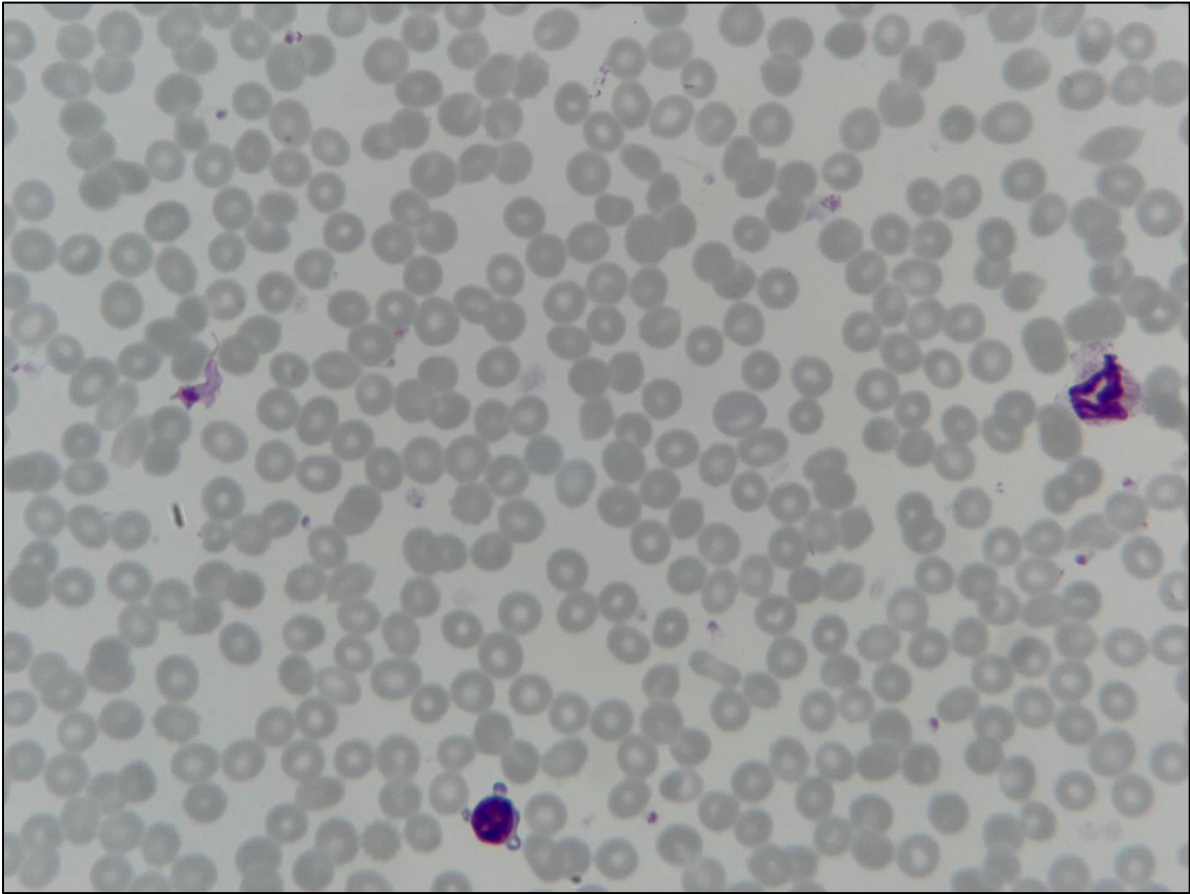


a. Report the blood film (3 marks)

b. State your preferred diagnosis (2 marks)

c. List three cause of macrothrombocytopenia (3 marks)

Question 10. A 10-year-old boy, who recently arrived in the UK from Democratic Republic of Congo, presents to the emergency department with fever, headache, joint pains and cervical lymphadenopathy.

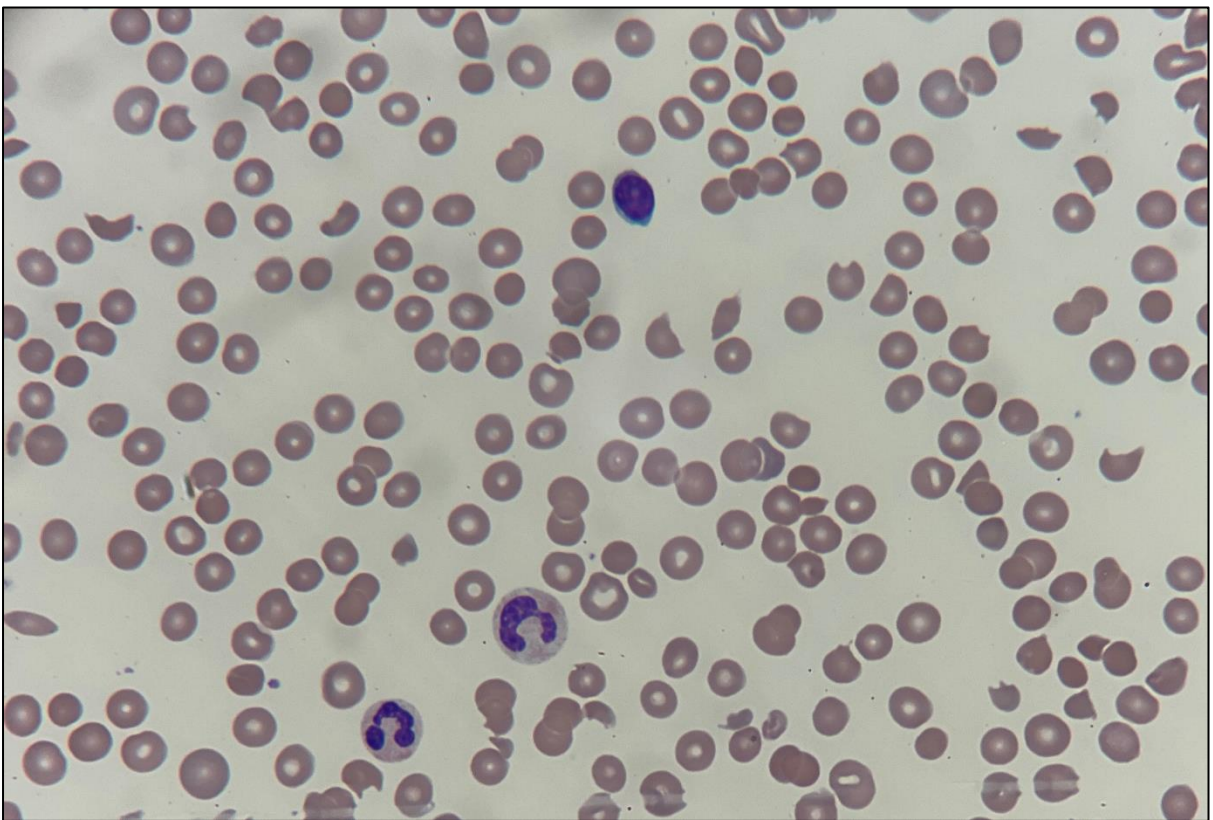
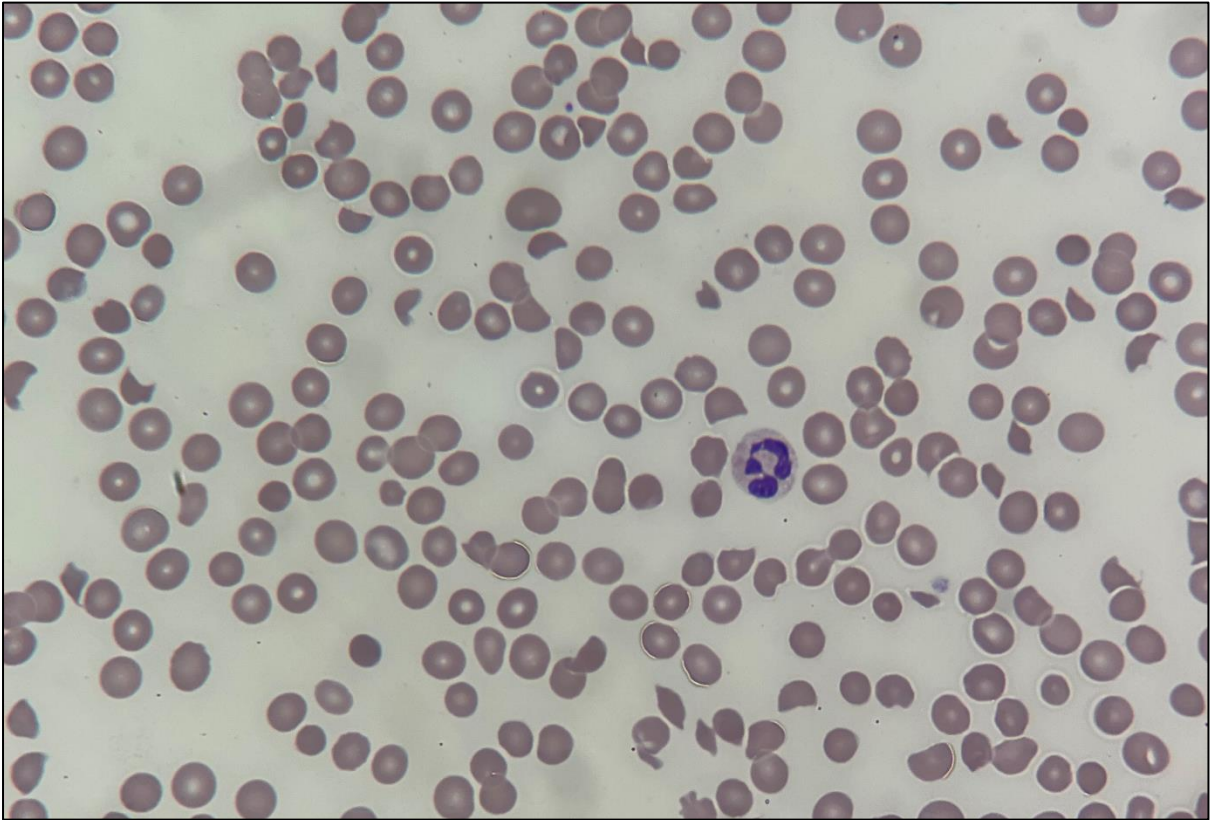


a. Report the blood film (3 marks)

b. Provide a preferred diagnosis, or differential diagnosis (2 marks)

c. How is this illness transmitted? (2 marks)

Question 11. A 55-year-old man presents to the emergency department with sudden onset confusion, right arm weakness and visual disturbance. He has no past medical history. A CT head demonstrates an acute cerebral infarct.



a. Report the blood film (3 marks)

b. List five additional urgent tests would you request (5 marks)

c. List five causes of these blood film appearances (5 marks)