

Mock FRCPATH Part 2 Morphology Paper May 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

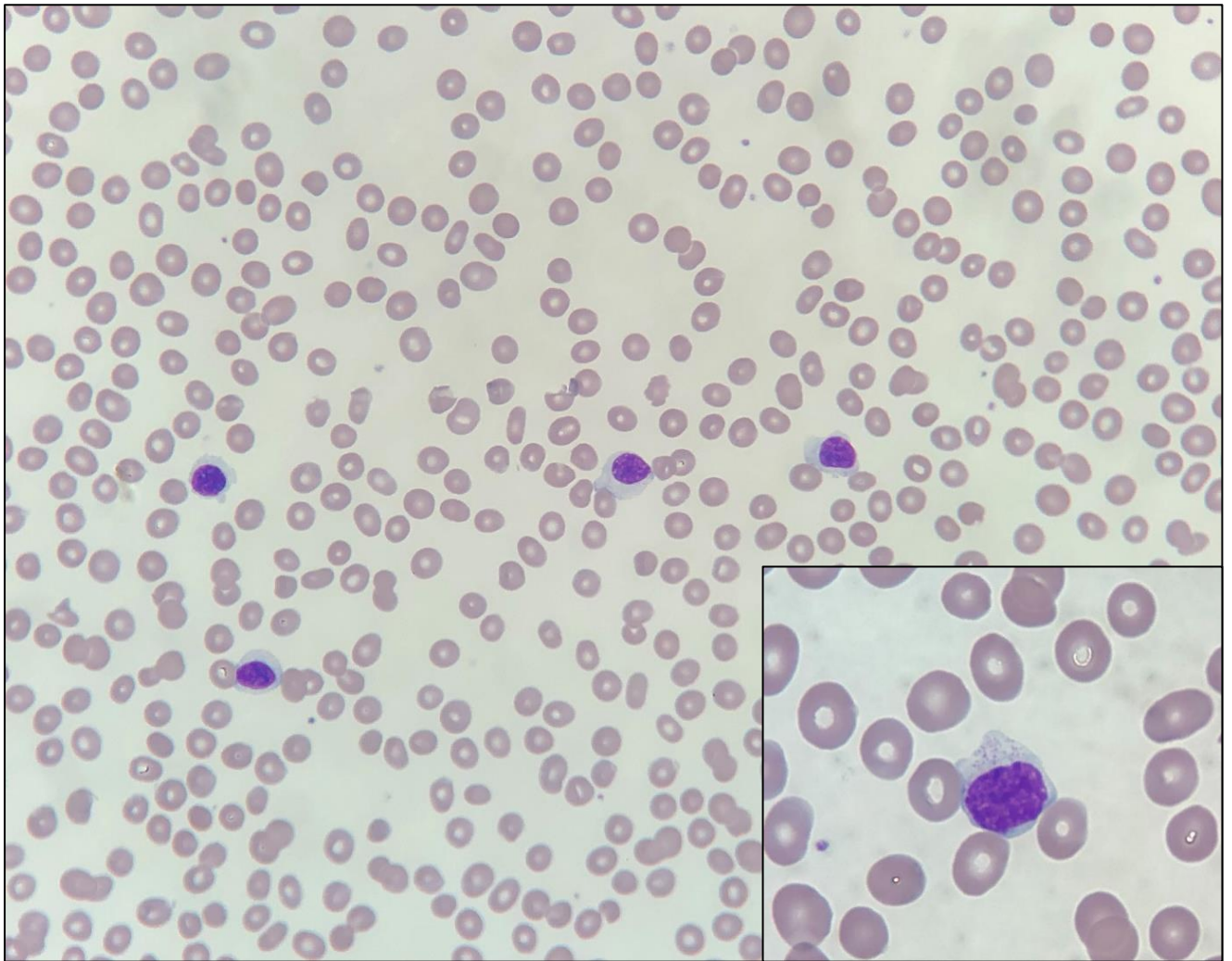
Monocytes 0.2-1

Eosinophils 0.02-0.5

Creatinine <120

Ferritin >30

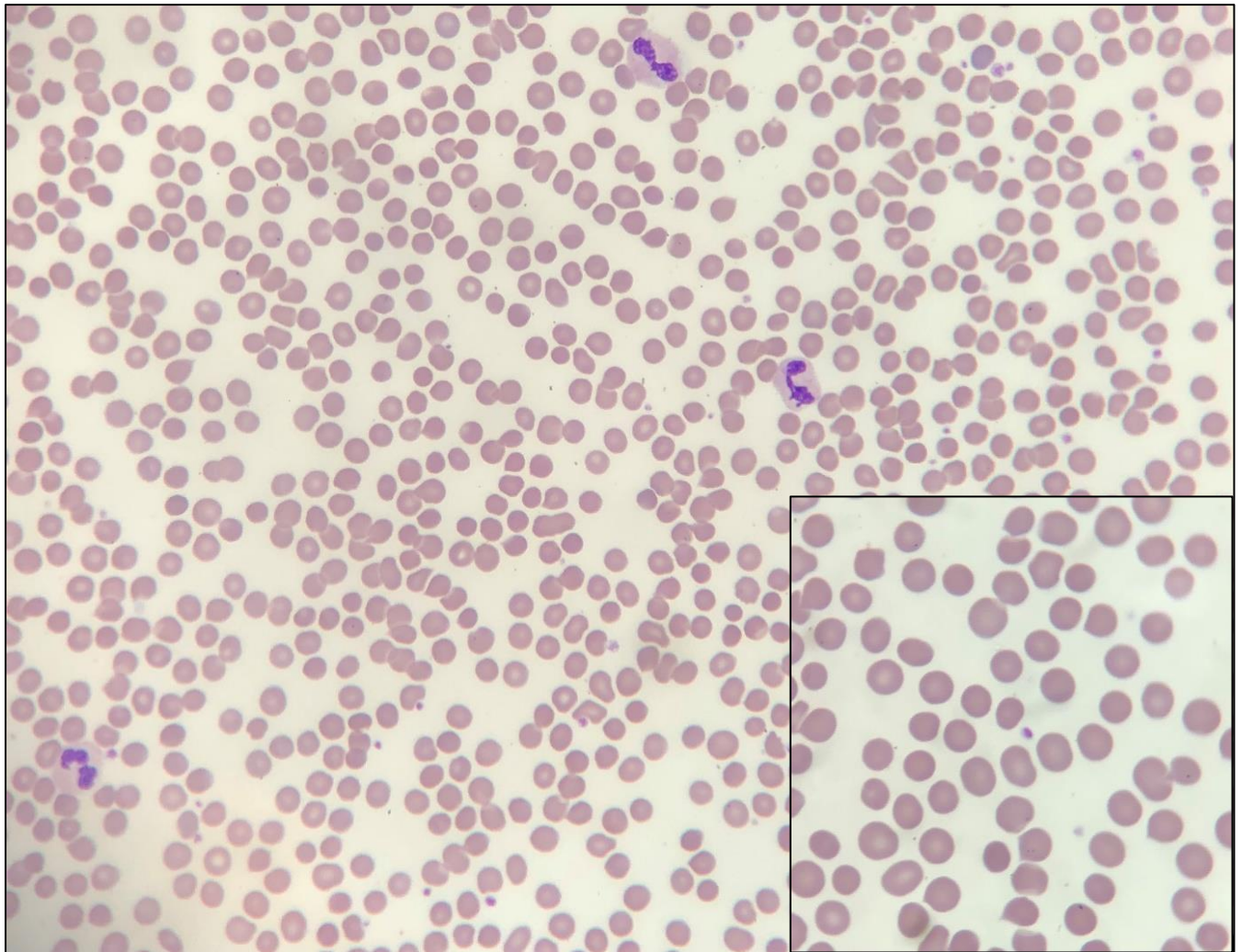
**Question 1.** A 70-year-old woman presents with a four-month history of progressive lethargy and recurrent cellulitis. Hb 83, WBC 9.8, Plt 76.



- Report the blood film (3 marks)
- Immunophenotyping of the peripheral blood identifies a population of cells that are CD2+, CD8+, CD16+, CD38+, CD 56+, CD3-, CD5-, CD25-. What is the diagnosis? (2 marks)
- Which additional cell marker would also be useful to test when planning this patient's management, and why? (2 marks)

**Question 2.** A 56-year-old man is seen by his GP for intermittent right upper quadrant pain. He is otherwise well. He takes no regular medications.

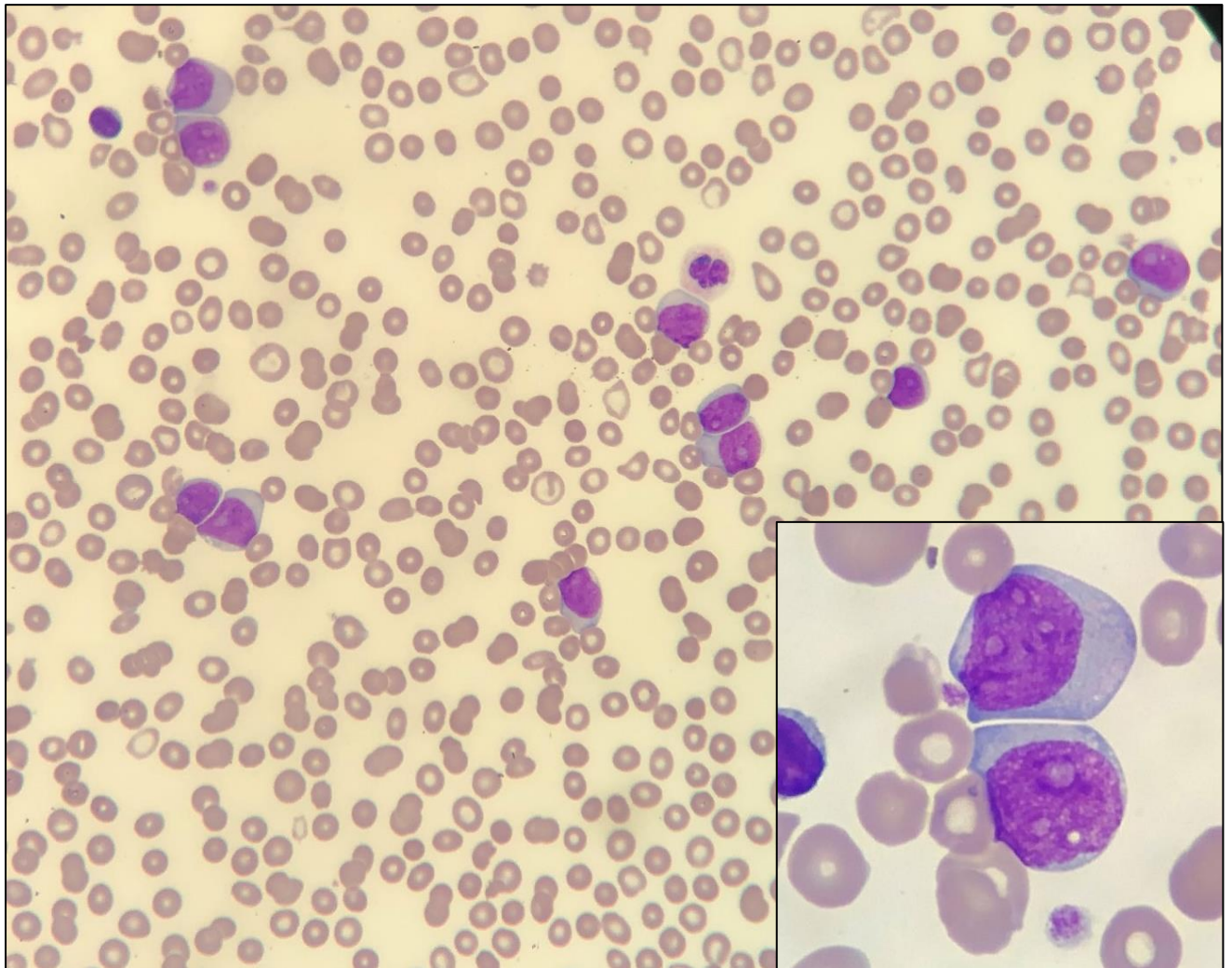
Hb 130, MCV 90, WBC 5



- Report the blood film (3 marks)
- State the diagnosis and describe the cause for the abnormality (3 marks)
- In the absence of a family history, state two diagnostic tests for this condition (2 marks)

**Question 3.** An 88-year-old woman presents to the emergency department with a three-week history of lethargy and fever. On the day of admission, she had developed cough and breathlessness.

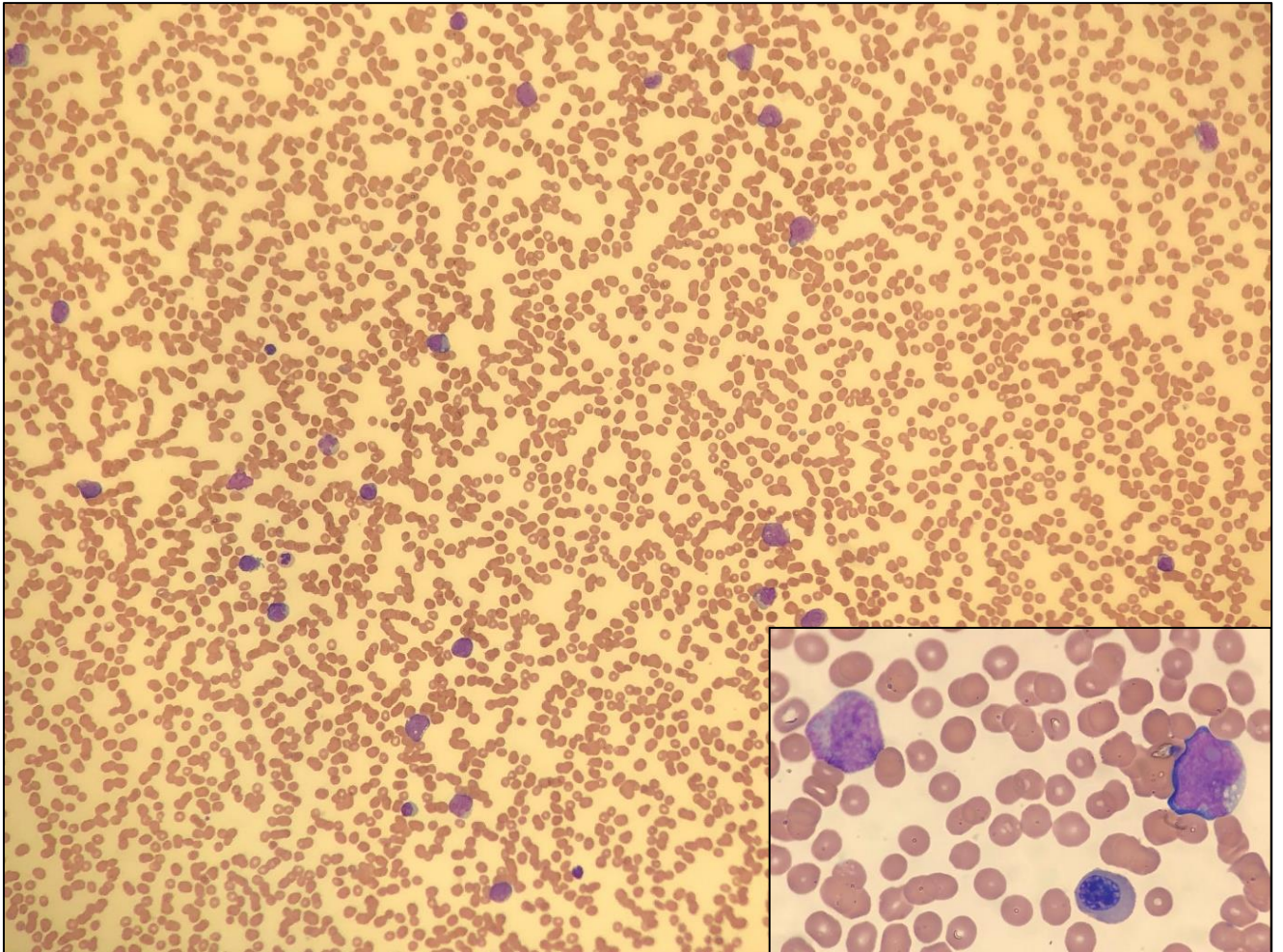
Hb 92, WBC 136



- Report the blood film (3 marks)
- Immunophenotyping of the peripheral blood was as follows: CD34+, CD13+, CD33+, CD117+, MPO+, HLA-DR+, CD3-, TdT-. What is the diagnosis? (2 marks)
- Give three examples of cytogenetic or molecular abnormalities associated with a poor prognosis in this condition. (3 marks)

**Question 4.** A 70-year-old man presents to his GP with four weeks of progressive left hip pain.

Hb 130, WBC 24



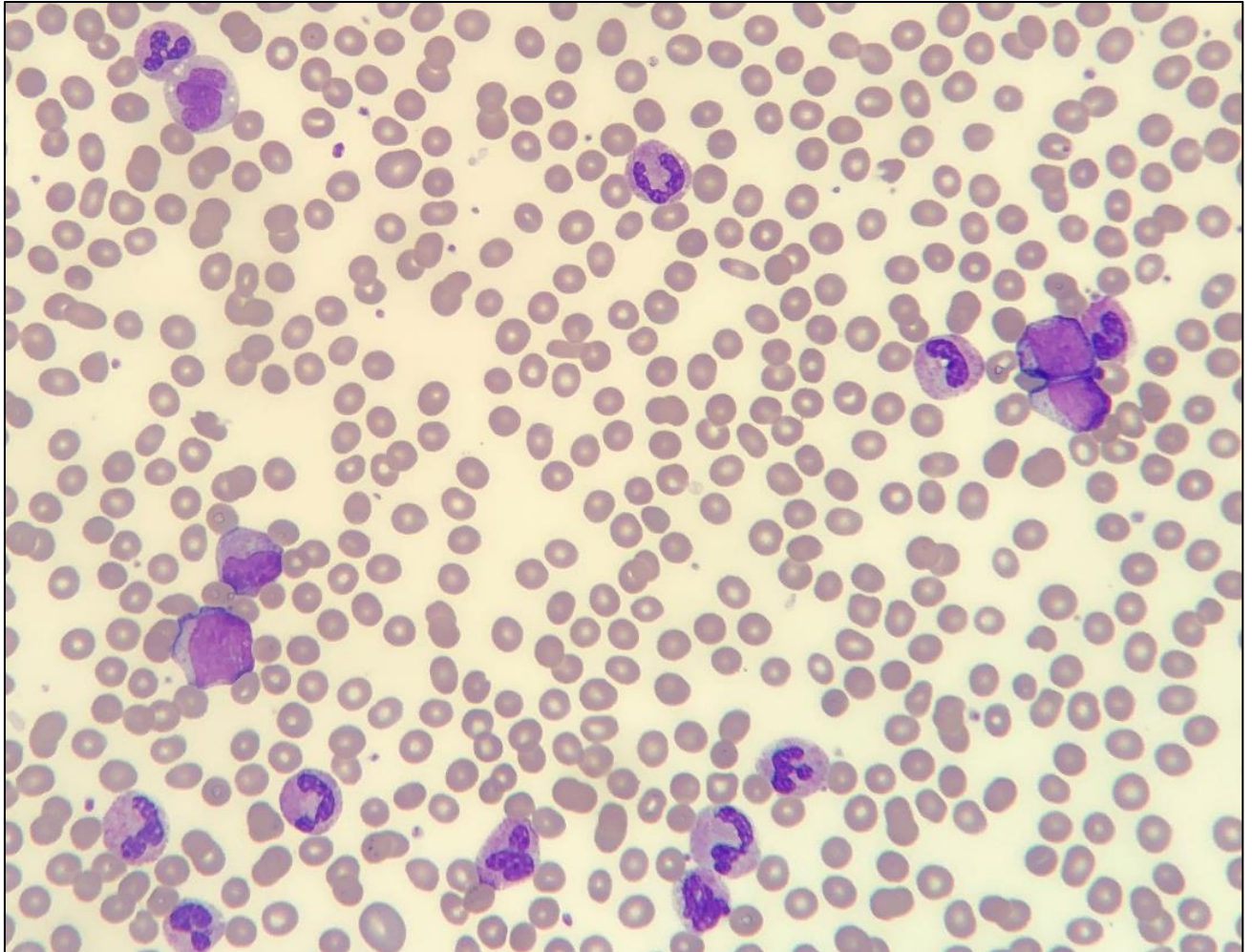
a. Report the blood film (3 marks)

b. Immunophenotyping of the peripheral blood is as follows: 64% of cells are CD34+, CD19+, CD79a+, CD10+, HLA-DR+, TdT+, MPO-, CD33-. What is the diagnosis? (2 marks)

c. The patient receives intravenous fluids and rasburicase prior to starting treatment. List the laboratory criteria for a diagnosis of tumour lysis syndrome (3 marks)

**Question 5.** A 69-year-old is admitted to the haematology ward feeling unwell with cough and breathlessness, twelve days after R-CHOP chemotherapy for high grade B cell lymphoma.

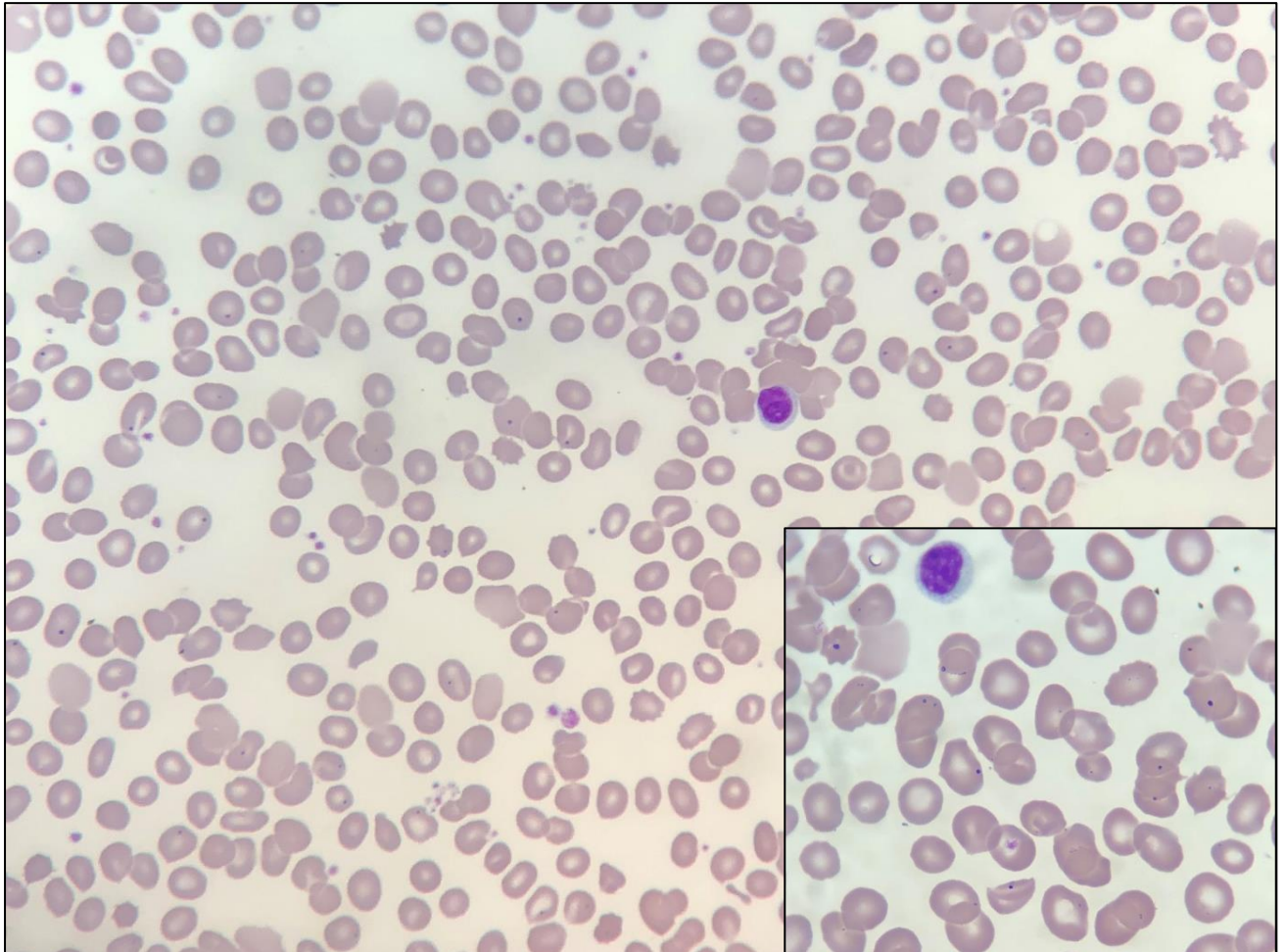
Hb 95, WBC 67.8, Plt 172.



- Report the blood film (3 marks)
- List your differential diagnosis for the film appearances (2 marks)
- State your initial management plan for the first 24 hours of this patient's admission (3 marks)

**Question 6.** A 50-year-old man attends the oncology clinic for follow-up of his previously treated gastric cancer.

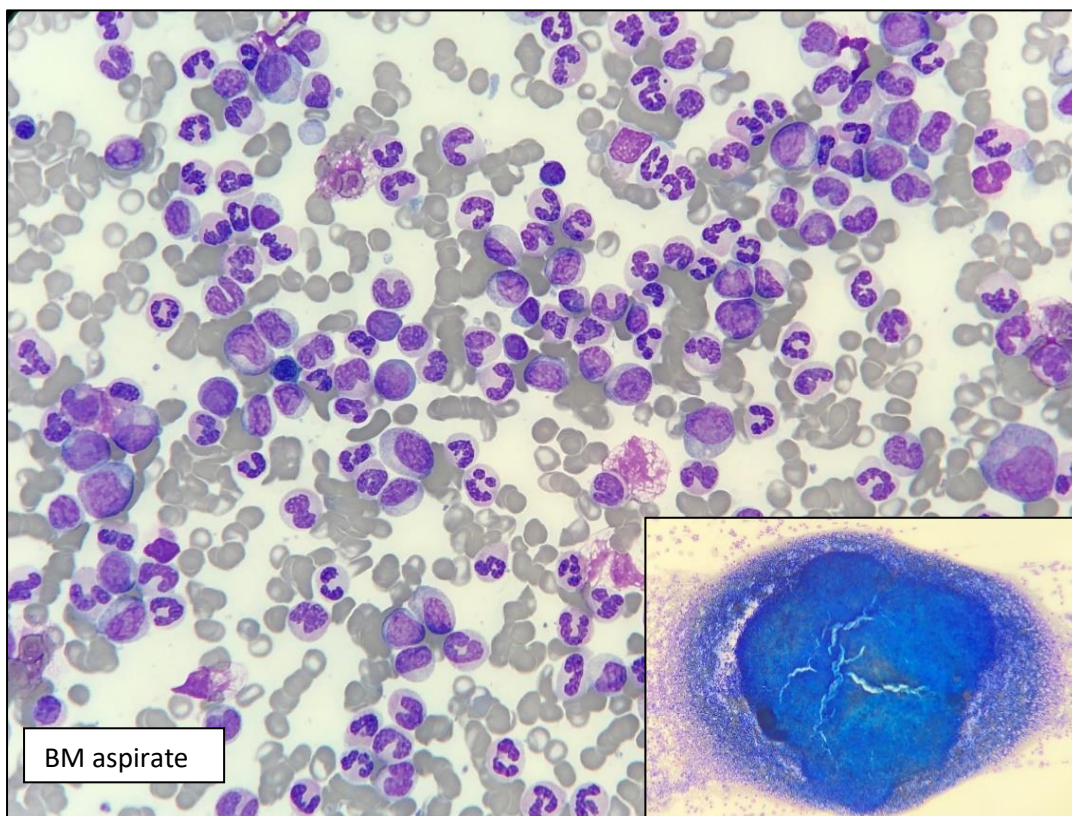
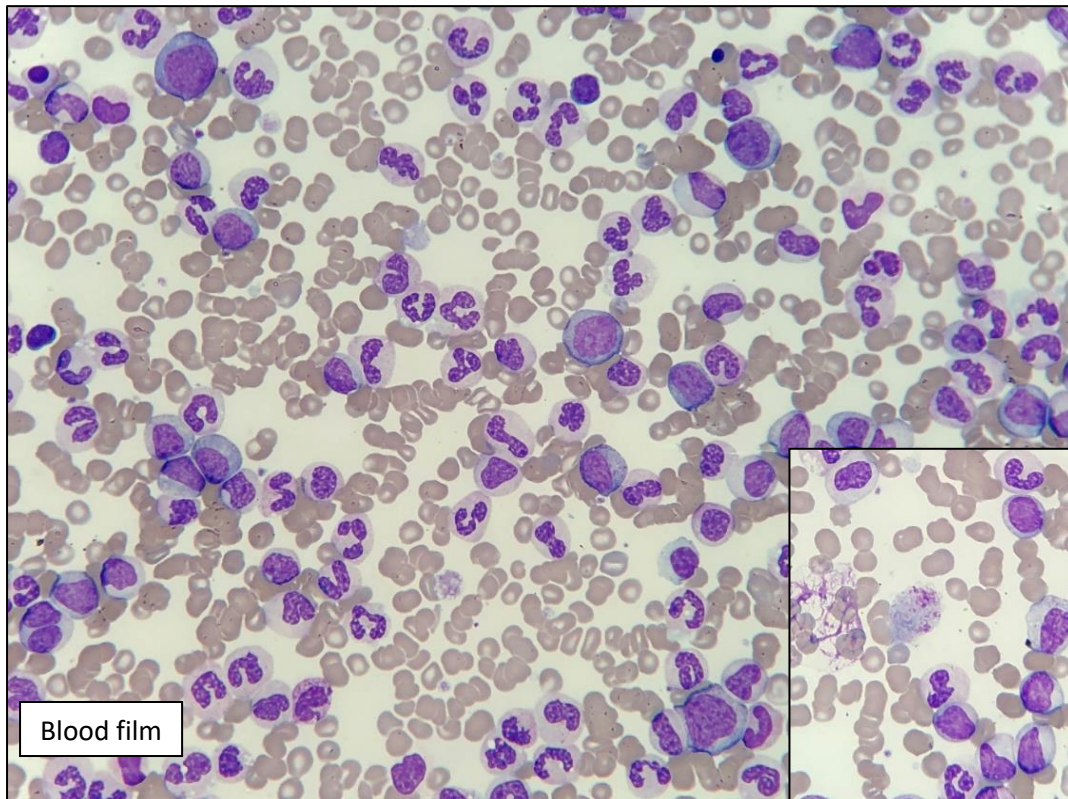
Hb 111, WBC 5.4, Plt 159



- Report the blood film (3 marks)
- What is the most likely explanation for your findings? (2 marks)
- Give an example of a secondary / confirmatory test for this condition and the expected result. (2 marks)

**Question 7.** A 75-year-old man presents with a three-month history of worsening lethargy and night sweats. On examination there is massive hepatosplenomegaly.

Hb 80, WBC 350, Plt 80. Lethargy. Massive hepatosplenomegaly.

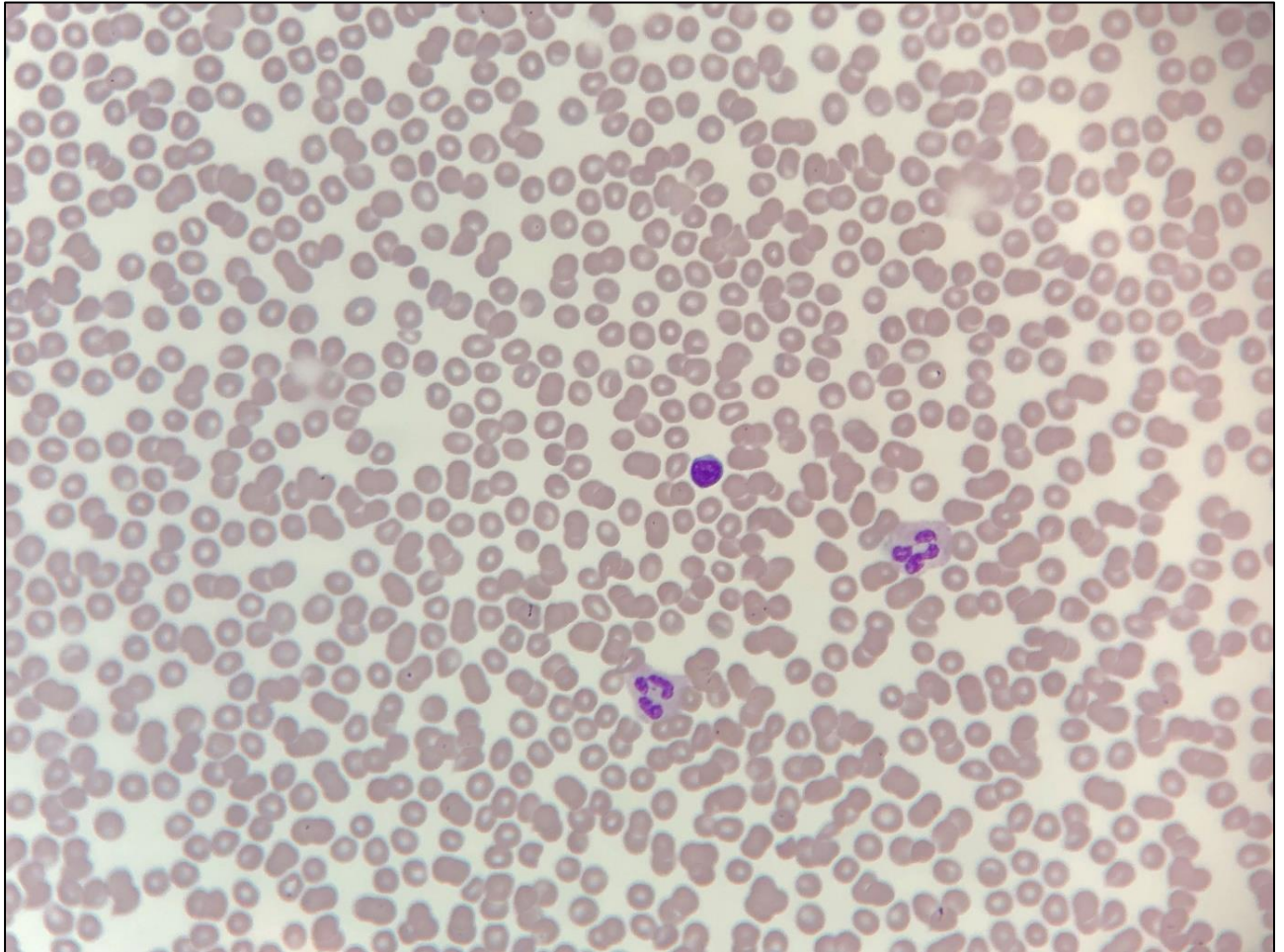




- a. Report the blood film (3 marks)
- b. Report the bone marrow aspirate (3 marks)
- c. Provide a differential diagnosis, with a very brief justification for your preferred diagnosis (2 marks)

**Question 8.** A 28-year-old pregnant woman presents at 30 weeks gestation with widespread, minor bruising and petechial rash to shins and ankles. She has no headache, fever, jaundice or oedema.

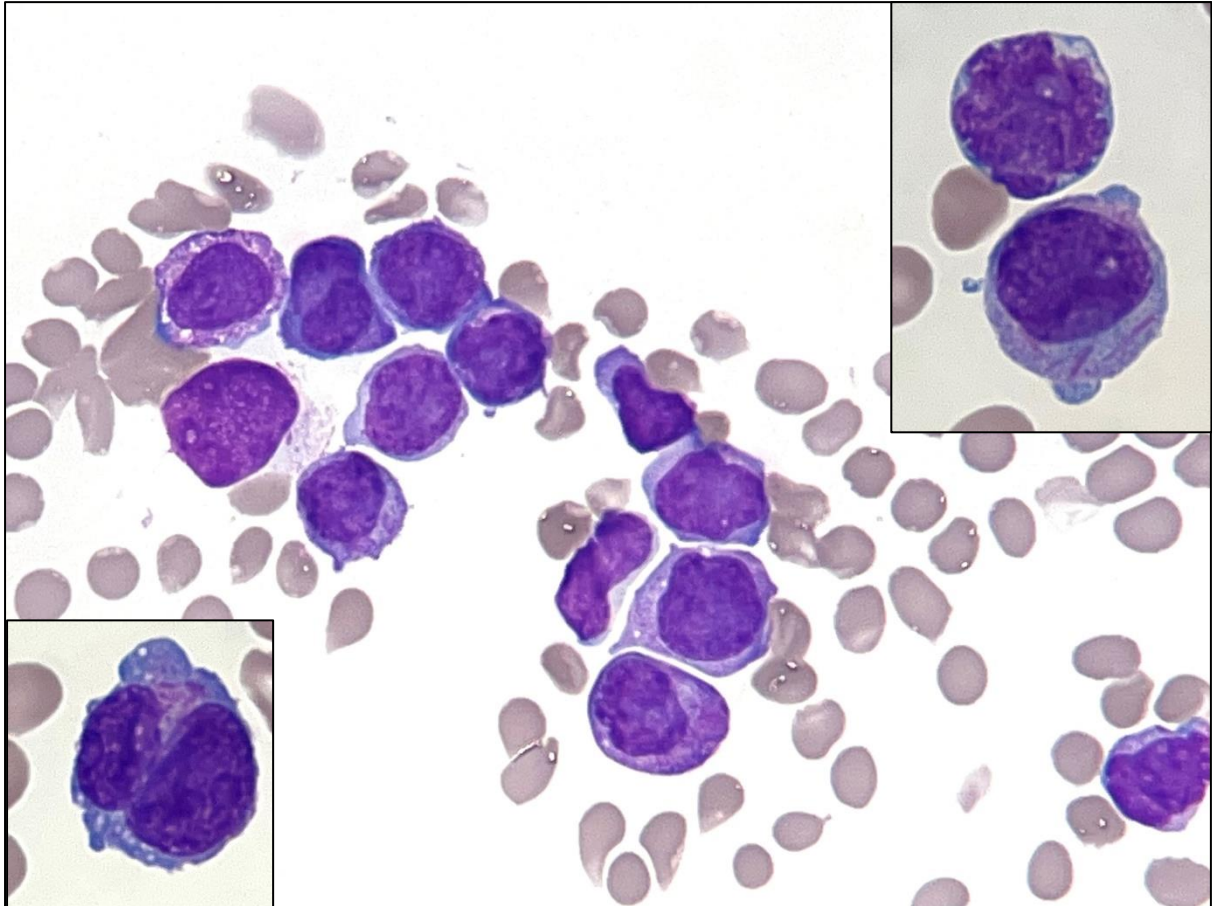
Hb 130, WBC 4.5, normal renal function, normal liver function, normal clotting screen.



- a. Report the blood film (3 marks)
- b. State the diagnosis (1 mark)
- c. Outline your management for this patient (3 marks)

**Question 9.** A 30-year-old woman presents to A&E with fever. Four weeks previously she has been noted to be neutropenic for the first time by her GP. On admission she is started on broad spectrum antibiotics and GCSF. Five days later her blood film is repeated.

Hb 80, WBC 35, Plt 80



- Report the blood film (3 marks)
- State the typical immunophenotype for this condition (3 marks)
- Ten days later she develops cough, breathlessness and fever. On examination she is hypoxic with dependent oedema to her sacrum and ankles. Chest x-ray reveals bilateral pleural effusions.  
State the likely diagnosis and immediate treatment (supportive care measures do not need to be stated) (3 marks)

**Question 10.** An 80-year-old man is referred to the haematology clinic with lethargy, night sweats and palpable splenomegaly.

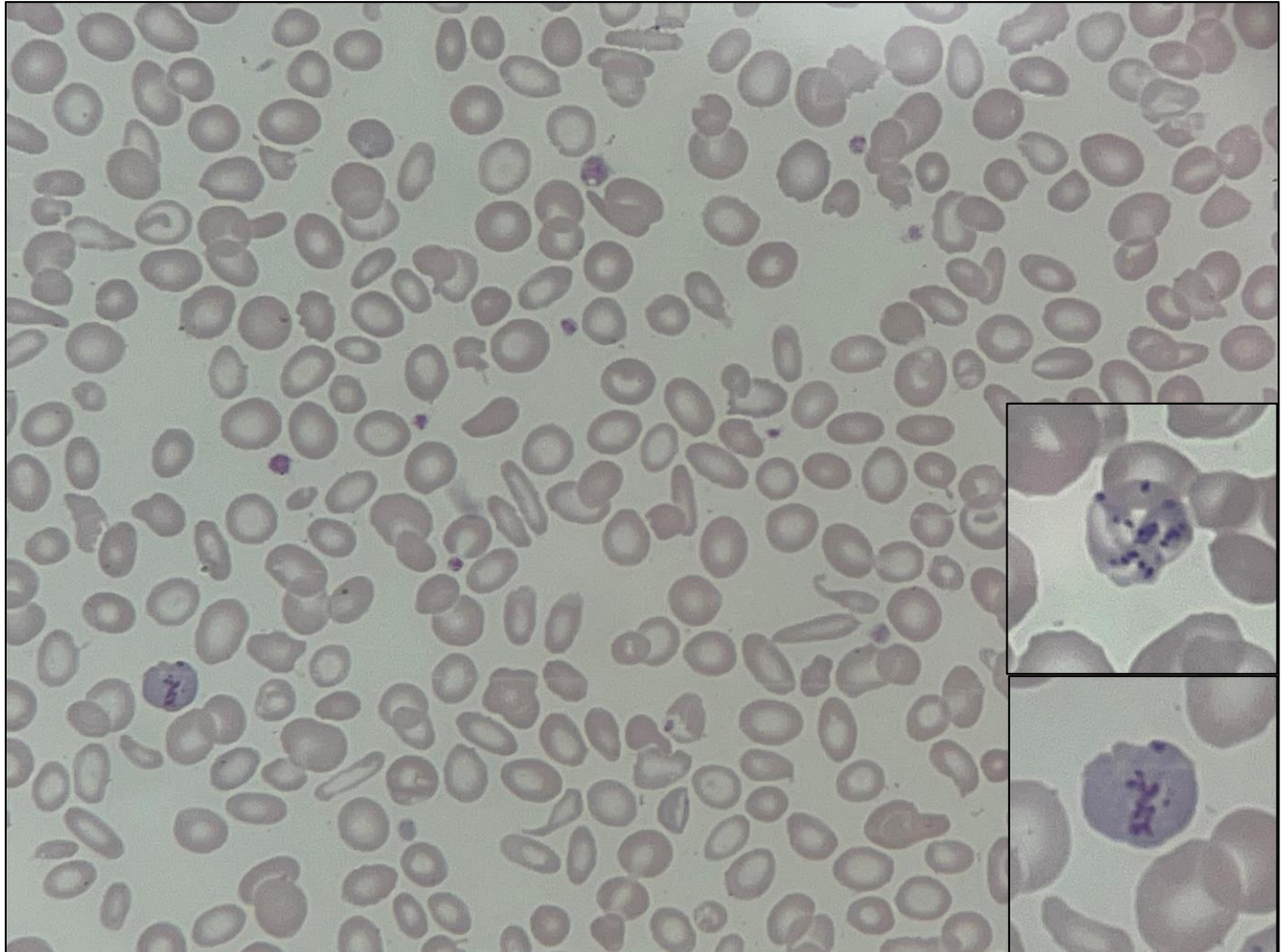
Hb 90, WBC 140, Plt 40.



- Report the blood film (3 marks)
- List a differential and indicate your preferred diagnosis (2 marks)
- Cytogenetic and molecular work-up identifies an ATM gene mutation (11q22.3). State one other condition is this diagnosis and gene mutation associated with (1 mark)

**Question 11.** A blood film is requested for a 60-year-old man attending the haematology clinic for review of his chronic anaemia.

Hb 95, MCV 66, MCH 19, WBC 6, Platelets 150, ferritin 150



- Report the blood film (3 marks)
- List three causes of the most distinctive abnormality in this film (3 marks)
- What investigation(s) would you perform next, and why? (2 marks)