Tired of the tiredness (answers on page 36)

Part one

Alfred, a 64-year-old Ugandan man, arrived at the clinic complaining of tiredness, a symptom that is new to him. He also 'doesn't feel quite as good as he normally does'. He has led a physically very active life combining the tending of his small piece of land with running a bicycle repair shop. His recent tiredness and malaise is stopping him from working his usual 12-hour day. He has no other symptoms: he is not breathless, has not lost weight, is eating and sleeping well, and has not taken any prescribed drugs or herbal medicines. Physical examination, including his blood pressure and urinalysis, are normal.

The only finding of note is that he has a neutrophil count of 1.1x109/L. The rest of his blood film is within normal limits, as is his red cell count and haemoglobin.

Q1 Which of the following statements are relevant to the finding of this neutrophil count?

(a) This is serious neutropenia and may indicate underlying marrow dysplasia
(b) Low neutrophil counts (benign ethnic neutropenia) are common in East Africans, so this count may be normal for Alfred.
(c) Mean neutrophil counts in healthy subjects vary widely with ethnicity, being highest in Europeans and lowest in Africans.
(d) Isolated neutropenia of this level is mild and is unlikely to be linked to Alfred's tiredness.
(e) The commonest cause of isolated neutropenia like this is the taking of a drug or a virus infection.

Part two

Q2 You have asked for a more detailed report on the blood film: assuming that his neutropenia might be caused by an infection, which of the following is known to be linked with a low neutrophil count?

(a) Acute cytomegalovirus infection
(b) Toxoplasmosis
(c) Infectious mononucleosis
(d) Early HIV
(e) Chronic hepatitis

Part three

Q3 Alfred has not been taking any prescribed medicines, but if he had, which of the following could explain an isolated neutropenia like this one?

(a) Ampicillin
(b) Phenytoin
(c) Ibuprofen
(d) Carbimazole
(e) Clopidogrel
(f) Omeprazole

Part four

Q4 Finding an isolated result like this can worry the primary care doctor, because of the possibility that it is the first sign of underlying malignant haematological disease. On follow up of around 100 such patients roughly how many are likely to develop bone marrow malignancy?

(a) 17
(b) 27
(c) 37
(d) 7
(e) 0

Part five

Q5 On close examination of a further blood film a small proportion of the neutrophils were dysplastic, and there were occasional red cells that were changed in shape and size - reported as anisopoikilocytosis. How would you continue to investigate Alfred's problems?

(a) Examine serology for causes of infection
(b) Check for vitamin deficiencies
(c) Do a bone marrow aspirate
(d) Watch for the next three months and repeat the tests