(See page 48)

Part one

Part two

Part three

Part four/five

Q1 (b), (c), (d). Although this level of neutropenia would suggest significant illness in a European, a Ugandan population study found that mean neutrophil counts are lower in healthy adult Africans than in other ethnic groups. This neutrophil count is in the lower range of normal for Uganda.

Q2 (a), (b), (c), (d), (e). All of these infections may start with a low neutrophil count even before symptoms of infection, such as fever and muscular aches and pains, arise. Neutropenia may be the only sign of early HIV.

Q3 (a), (b), (c), (d), (e), (f): All of these medicines have been linked with neutropenia – and there are many others. In most cases it is mild and a balance must be struck between the advantages of the drug and the risk of infection. If you decide to continue treatment you must continue to watch the neutrophil count to avoid descent into agranulocytosis. In such mild cases stopping the medication usually leads to rapid neutrophil recovery. Agranulocytosis (neutrophil count below 0.1x109/L) has a 10% mortality rate.

Q4 (d). The rate of conversion to a malignancy is low, but it is wise to watch the blood count in patients like Alfred for several months to ensure that it is not missed.

Q5 (a), (b), (d). Alfred's serology was negative for HIV and hepatitis B and C. There was no evidence of vitamin B12 or folate deficiency, in which neutropenia sometimes precedes the more usual presentation of red cell macrocytosis. It was decided to follow up with repeated blood films over the next three months, during which time the neutrophil count gradually declined to 0.9x109/L. A bone marrow aspirate confirmed myelodysplastic syndrome, and Alfred's care was transferred to the consultant haematologist. A year later he is doing well.