

## **Isolated Neutropenia**

### **Definitions**

Mild  $1-1.99 \times 10^9 / l$

Moderate  $0.5-0.99 \times 10^9/l$

Severe  $< 0.5 \times 10^9/l$

Patients are more at risk of infection with moderate especially severe neutropenia.

- If a patient with a neutrophil count less than  $1 \times 10^9 /L$  presents with fever or with clinical signs of sepsis they should be admitted and treated with intravenous antibiotics as per the policy for neutropenic sepsis

### **Causes**

Medications – check BNF

Viral infections

Autoimmune disease

Vit B12/folate deficiency

Sepsis

Ethnic variation – people of Afro-Caribbean origin often have neutrophil counts of 0.8-1.6 and are not at increased risk of infection

Hypersplenism/ liver disease

Felty's syndrome

Thyroid dysfunction

Nutritional deficiencies / anorexia nervosa



Bone marrow failure syndromes eg myelodysplasia / aplastic anaemia

Bone marrow infiltration – eg leukaemias

Congenital syndromes eg cyclical neutropenia

### **History and Examination**

Ask about infection and mouth ulcers. Ask about causes above and family history

Looks for signs of autoimmune disease, liver disease, lymphadenopathy or splenomegaly

### **Investigations**

Look at previous blood counts and trends

LFTs

HIV, hepatitis B/C

Blood film

TFTs

B12 / folate/ferritin

Autoimmune screen

### **Management**

The management will vary from patient to patient depending on differential diagnosis, prior blood counts and clinical concern. Causative medications may not need to be stopped if they are important and the neutrophil count is above  $1 \times 10^9 /L$



and there are no recurrent infections. In neutropenia associated with viral infections this may persist for weeks and less commonly for a few months.

In general

- Neutrophil count  $1.5 \times 10^9$  /L and above – rule out secondary causes as per suggested history, examination and investigations. Repeat in four weeks' time and if stable and no concerns then no further investigation.
- Neutrophil count  $1-1.49 \times 10^9$  /L – rule out secondary causes as per suggested history, examination and investigations. Repeat in two to four weeks' time. If stable and there are no associated full blood count abnormalities, film abnormalities or clinical concern patients can usually be monitored in primary care.
- Neutrophil count below  $1 \times 10^9$  /L. A blood film will have been performed in these situations and the results can guide frequency and timing of further tests. In general, someone with a NEW neutrophil count persistently below  $1 \times 10^9$  /L after a repeat should have haematology advice and guidance sent.
- If the neutropenia is associated with other blood count or film abnormalities or abnormalities on examination or recurrent infections then make a formal referral. Additional cytopenias make the likelihood of a bone marrow disorder much higher.