

Definition

Mild if ANC $1-1.5 \times 10^9$, moderate if $0.5 - 1.0 \times 10^9/L$, severe if $<0.5 \times 10^9/L$

Aims

- What is the underlying cause of neutropenia?
- What is the cause of neutropenic sepsis if present?

Causes of neutropenia

Congenital:

- Rare, present from birth e.g. Kostmann's or Shwachman-Diamond's syndromes
- Cyclic (AD, every 3 weeks lasting 3-6d,)

Acquired:

- Aplastic anaemia
- Vitamin B12 or folate deficiency
- BM infiltration with malignancy
- Chemotherapy
- Radiotherapy
- Felty's syndrome
- Hypersplenism
- Drugs e.g. phenytoin, chloramphenicol
- Autoimmune neutropenia
- Sepsis itself e.g. viral, typhoid

Causes of neutropenic sepsis (febrile neutropenia)

G+ve: coagulase-neg staph, staph aureus, strep, enterococci

G-ve: Pseudomonas, E.Coli, Klebsiella

Fungi, viruses

Commonly indwelling line infections, respiratory or urological sepsis.

Investigations

Urine culture

Bloods: FBC, UEC, coags (+FDPs, D-dimers if ?DIC), cultures - peripheral & any lines

Imaging: CXR

Other: other cultures e.g. stool as indicated.

Management of neutropenic sepsis

- Reverse barrier nursing
- Resuscitate if hypovolaemic or septic shock is present.
- Full history and examination
- Send cultures
- Antibiotics - broad spectrum as per local protocol e.g.:
 - **timentin** 3.1g q6h IV + **gentamicin** 5mg/kg IV (\pm **vancomycin** if shocked)
- Diagnose underlying cause for the neutropenia and treat if possible
- Treat complications e.g. DIC, organ failure
- Consider G-CSF to \uparrow ANC in severe cases.