Hampshire Hospitals NHS
NHS Foundation Trust

Neutropenia

Presentation

Definition

Slight neutropenia: 1-1.5 x10^9/L. Moderate neutropenia: 0.5-1x10^9/L. Marked neutropenia <0.5 x10^9/L.

Ethnic group: African and Afro-Caribbean adults have lower normal neutrophil count ranges down to 1x10^9/L.

Clinical Findings

- If incidental and isolated slight neutropenia less concerning than if associated with other cytopenias e.g. monocytopenia, anaemia, thrombocytopenia. However need repeat to ensure resolves.
- The blood film comment may be 'mild neutropenia with reactive lymphocytes'. In this case the most common cause would be a viral illness but it is important to check for other causes especially reviewing medications and repeating the FBC to ensure that resolves in 4 to 6 weeks (or sooner if indicated).

Causes

Bone marrow failure: defect in production	Haematinic deficiency, malignancy: haematological or solid.
Peripheral consumption: non immune mediated	Benign familial and ethnic neutropaenia (Black African background) – increased marginalisation of the neutrophils, not associated with infections Cyclical neutropaenias Post-infection
Peripheral consumption: immune mediated	Autoimmune neutropaenia: in isolation or associated to autoimmune diseases, haemolytic anaemia, ITP Chronic benign neutropaenia – infants and children, usually spontaneously resolves by age 4. Likely immune mediated.
Drugs and toxics	Alcohol Excluding cancer chemotherapy, the highest risk categories are antithyroid drugs, co-trimoxazole, sulfasalazine and neuropsychotropics. Many drugs may cause mild neutropenia - e.g. NSAIDs, sodium valproate. Check BNF or SPC. Usually counts recover after stopping drug.
Others	Congenital (rare) Felty's syndrome: rheumatoid arthritis, splenomegaly, neutropaenia

History

- Recent viral illness or infection
- Past medical history including previous malignancy and chemotherapy/radiotherapy (increased risk of secondary malignancy), autoimmune conditions, rheumatoid arthritis.
- Drug history including over the counter medication.
- Sexual and travel history (infections)
- Social history including alcohol, use illicit drugs and contact with of toxics.
- Family history including autoimmune conditions.

Symptoms and Signs

- Symptoms of neutropaenia and duration: recurrent infections (ask timing – important in cyclical neutropaenias), ulcers
- Other signs of other cytopaenias: anaemia, thrombocytopaenia
- Symptoms suggestive of malignancy: constitutional symptoms and organ specific.
- Symptoms suggestive of autoimmune condition.

Investigations

Investigations in primary care should include	Investigations to consider in primary care if persistent unexplained neutropenia
FBC and film should be performed when neutropenia first found	Haematinics
Repeat FBC after 4 weeks or sooner if clinically indicated to check neutropenia resolves.	U+E, LFTs, bone profile, TFTs
	Immunoglobulins with electrophoresis
	Viral screen: HIV (Hep B and C, EBV, CMV, HSV, VZV, Toxoplasma, Syphilis)
	Autoimmune profile

Referral

- Neutrophils < 1 x 10^9/L and patient unwell/febrile - refer urgently for admission
- For patients that are well and afebrile. Treat reversible factors for example, stopping culprit drug, correcting haematinic deficiency and then for:
  a) Neutrophils < 1 x 109/L - repeat FBC with blood film examination within one week. If neutropenia persists without cause refer urgently.
  b) Neutrophils 1-1.5 x 109/L repeat with blood film at 6 weeks and refer to haematology if neutropenia is progressively severe or other cytopenias or discuss with haematologist if persistent but stable.

References

1) W S A Smellie et al. Best practice in primary care pathology: review 7. Journal of Clinical Pathology 2007;60:458-46.