Hampshire Hospitals NHS
NHS Foundation Trust

Thrombocytosis

Presentation

Definition

Platelet count >450 x 10^9/L

Causes

- Thrombocytosis may be due to a primary bone marrow condition or a secondary reactive cause.
- Rarely cell fragments or bacteria may cause a spurious increase in the platelet count. This may occur in severe burns, red cell fragmentation syndromes, bacterial infection, cryoglobulinaemia or malignancy.

Primary	Myeloproliferative Neoplasm (MPN) • Essential thrombocythaemia (ET) • Polycythaemia vera (PV) • Primary myelofibrosis (PMF) • Chronic myeloid leukaemia (CML) Myelodysplasia syndrome (MDS) with del5q MDS/MPN overlap syndromes • Chronic myelomonocytic leukaemia (CMML) • RARS-T • MDS/MPN-U
Secondary	• Haemorrhage • Inflammation and infection • Iron deficiency • Acute haemolytic anaemia • Malignancy • Hyposplenism • Stress e.g. burns, MI • Iatrogenic e.g. corticosteroids, adrenaline, TPO agonists
Spurious (rare)	The blood film should exclude these causes

Essential thrombocythaemia

- Clonal bone marrow disorder with around 60% of cases positive for the mutation in the JAK2 gene (V617F in exon 14), 5% MPL (W515K in exon 12) and 25% CAL-R positive.
- Can be asyptomatic or manifest with thrombosis (including unusual sites), bleeding, weight loss and sweats, erythromelalgia and aquagenic pruiritis.

- Treatment is based on risk stratification of thrombosis. Pharmacological cytoreduction and antiplatelet drugs used to reduce thrombotic risk.
- There is a risk of progression to myelofibrosis or transformation to AML.

History

- Past medical history including history of thrombosis and splenectomy. Assess cardiovascular risk factors.
- Look for causes of reactive thrombocytosis.

Symptoms and Signs

- Thrombosis or bleed (platelet count >1000-1500 can interact with von Willebrand factor and lead to bleeds)
- Systemic symptoms including weight loss, sweats, erythromelalgia and aquagenic pruritus.
- Hepatosplenomegaly
- Lymphadenopathy / mass suggestive of malignancy

Investigations

Investigations in primary care should include	Investigations to consider in primary care
Ferritin (iron studies)	JAK2 (testing includes CAL-R / MPL): a negative result does not exclude a myeloproliferative neoplasm (10-15% negative with essential thrombocytosis).
Blood film	
CRP	
Repeat FBC. If secondary cause found repeat when cause has resolved or has been treated e.g. if post operatively repeat in around 8 weeks.	

Referral

- If secondary cause found suggest repeat FBC once cause resolved or treated.
- Features more suspicious of a primary cause include thrombosis, erythromelalgia, aquagenic pruiritis, splenomegaly, weight loss or sweats, platelets >1000 x 10^9/L.
- If persistent thrombocytosis despite secondary causes excluded or suspicious of primary bone marrow aetiology suggest referral to clinical haematology.

References

Br J. Haematology. 2015 Nov; 171(3): 306-21. How we diagnose and treat essential thrombocytopenia. Alimam S. et al.