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**Thrombocytosis**

**Presentation**

Definition

Platelet count >450 x 109/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, cryoglobulinemia or malignancy.

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| 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 asymptomatic or manifest with thrombosis (including unusual sites), bleeding, weight loss and sweats, erythromelalgia and aquagenic pruritus.
* 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**

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| 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 pruritus, splenomegaly, weight loss or sweats, platelets >1000 x 109/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.