A005 - THROMBOCYTOSIS IN ADULT PATIENTS

What is thrombocytosis?

Thrombocytosis is defined as a high number of circulating platelets in the blood and is usually an incidental finding on a routine FBC.

What causes thrombocytosis?

This is due to **increased production** which can be a primary bone marrow problem (rare) or be secondary/reactive (very common).

Causes of increased production of platelets
Primary thrombocytosis – clonal bone marrow disorders
Essential thrombocythaemia (ET) – isolated thrombocytosis
Polycythaemia vera (PV) – thrombocytosis with raised red cell count
Myelofibrosis (MF) – thrombocytosis and marrow fibrosis
Chronic myeloid leukaemia (CML) - Philadelphia chromosome (t(9;22)) present
Rarely as part of the myelodysplastic syndrome (usually low platelets in MDS)
Secondary or reactive thrombocytosis – bone marrow is normal
Infection (acute or chronic)
Inflammatory disorders e.g. inflammatory bowel disease, arthritis, connective tissue disorders
Acute or chronic blood loss, especially if iron deficient
Tissue damage from trauma or surgery
Malignancy
Rebound following chemotherapy
Splenectomy/hyposplenism (reduced removal from blood stream)

What investigations should be performed in patients with persistent thrombocytosis?

(platelets >450 x10^9/L over 2-3 months)

- History – splenectomy; blood loss; inflammatory disorder; chronic infection; thrombosis; occult malignancy
- Exam – spleen, evidence inflammation/infection/malignancy
- FBC – review if other cells raised
- Ferritin/iron studies – iron deficient
- CRP/ESR
- Autoantibody screen, rheumatoid factor (if inflammatory disease suspected)

N.B *If U and Es checked – there is often **spurious hyperkalaemia** in primary thrombocytosis – this is a laboratory anomaly caused by potassium leaking from platelets in storage. It does not affect the patient.*

What problems do a secondary or reactive thrombocytosis cause?

Thrombus formation is extremely rare. It tends to occur in patients with platelet count more than 1000x10^9/L **plus** other risk factors for thrombosis.

- complications of the underlying cause e.g. bleeding, are much more common

What treatments are given to patients with reactive thrombocytosis?

- treatment of the underlying condition
- patients with additional risk factors for thrombosis e.g. imminent surgery may need antithrombotic measures e.g. compression stockings, aspirin or prophylactic heparin.

What problems result from thrombocytosis caused by a myeloproliferative disorder?

Patients are at increased risk of both thrombotic (arterial and venous) and haemorrhagic events. The most important risk factors for a thrombotic event are

- age over 60 years
- past history of thrombotic problems
- presence of other risk factors for arterial vascular disease.

Haemorrhagic complications are less common but are more likely to occur if the platelet count is more than 1000x10^9/L and very likely if it is >1500x10^9/L.

What treatments are given to patients with a myeloproliferative disorder?

- watchful waiting +/- aspirin
- cytoreductive therapy e.g. hydroxycarbamide or anagrelide + aspirin

When should I seek further advice or refer to haematology?

- persistent thrombocytosis ≥600x10^9/L over 6-8 weeks with no obvious secondary or reactive cause
- persistent thrombocytosis ≥450x10^9/L associated with other full blood count abnormalities (*excluding* anaemia due to iron deficiency)
- persistent thrombocytosis ≥450x10^9/L associated with thrombotic events
- thrombocytosis ≥450x10^9/L associated with splenomegaly (either clinically or radiologically)

What follow up is recommended for patients not referred to haematology?

- asymptomatic patients with chronic reactive thrombocytosis do not require regular FBCs - although the platelet count may be a useful marker of the disease activity.
- if a reactive cause for thrombocytosis has not been identified, it may be prudent to recheck the patient's FBC every 3 to 6 months to ensure they are not developing a myeloproliferative disorder (rising platelet count – increase in other cell types).

What other advice should I give?

- patients should be asked to return for FBC if they develop thrombotic (e.g. TIAs) or haemorrhagic symptoms, or left upper quadrant discomfort (might suggest splenomegaly).
- lifestyle should be reviewed and additional risk factors for arterial/venous thrombosis should be addressed.

References

Guideline for investigation and management of adults and children presenting with thrombocytosis – Claire Harrison et al. British Journal Haematology 2010, 149, 352-375
http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2141.2010.08122.x/full