HEFT Pathology Guideline

GP Investigation and Referral Pathways for leucocyte, platelet disturbances and polycythaemia

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1. Leucocytosis
2. Lymphocytosis in Adults
3. Neutropenia
4. Polycythaemia
5. Thrombocytosis
6. Thrombocytopenia
Leukocytosis is defined as a total WBC count greater than 11 x 10⁹/l in adults. No clinical action is required for a WBC greater than 8.4 but less than 11.0.

- **Leucocytosis**
  - **WBC >11 but <20**
    - Investigate in Primary Care
      - Blood film/WBC differential
      - Assess for reactive causes: smoking, infection, inflammation, neoplasia
      - Lymph node/spleen exam
    - Persistent, unexplained:
      - WBC > 20 but < 50
      - Neutrophils > 15
      - Eosinophilia
      - Monocytosis
      - Basophilia
    - Seek Haematology opinion
  - **WBC >50 but < 100**
    - Leucoerythroblastic blood film picture
    - Film suggestive of Chronic Myeloid Leukaemia
  - **WBC >50 but < 100**
    - URGENT REFERRAL
      - New suspected Acute Leukaemia
    - Film suggestive of Chronic Myeloid Leukaemia with either WBC >100 or CNS symptoms (headache, visual loss, vomiting)

- **CONTACT ON CALL HAEMATOLOGIST**
Lymphocytosis is defined as a total LYMPH count greater than 4 x 10^9/l in adults.

**Lymphocytosis in Adults**

- **LYMPH> 20 or rapidly raising and:**
  - Anaemia
  - Neutropenia
  - Thrombocytopenia
  - Progressive Lymphadenopathy
  - B symptoms:
    - unexplained weight loss
    - night sweats
    - evening temperature
  - Presence of suspicious cells/ blasts on blood film
  - URGENT REFERRAL

- **LYMPH > 5 but < 20**
  - Criteria not met for urgent referral

**Investigate in Primary Care**

- Lymph node/spleen exam
- Blood film/WBC differential
- Glandular fever screen
- Exclude reactive causes:
  - smoking
  - other viral infection

**Reactive cause identified?**

- **YES**
  - Repeat FBC in 6 weeks to confirm transient nature

- **NO**
  - Seek Haematology opinion
Neutropenia is defined as a total NEU count less than $2\times10^9/l$ in adults. Complications are associated to the depth of neutropenia. **Only patients with a NEU count < 1 x 10⁹/l need review by Haematology**; a NEU count < 0.5 is associated with a major infection risk.

- NEU < 1 associated with:
  - Anaemia
  - Thrombocytopenia
  - Lymphadenopathy
  - Organomegaly
  - Active sepsis
  - B symptoms: unexplained weight loss, night sweats, evening temperature
  - Presence of suspicious cells/ blasts on blood film

- NEU < 1 and criteria not met for urgent referral
- NEU > 1 but < 2

- Investigate in Primary Care
  - Blood film/WBC differential
  - Exclude viral infection
  - Autoimmune profile
  - Check medication
  - Consider ethnic neutropenia; Middle east, African, Caribbean origin

- Repeat FBC in 3-4 weeks

- STABLE NEU
  - Monitor FBC every 3 months

- FALLING NEU
  - Seek Haematology opinion

- URGENT REFERRAL/ DISCUSSION WITH ON CALL HAEATOLOGIST
Sheet 4. Polycythaemia
Elevated Hb/Hct has a wide differential diagnosis including polycythaemia vera, relative polycythaemia and secondary causes like smoking and COPD.

- **Hct > 0.60 in males, > 0.56 in females and absence of congenital cyanotic heart disease**
- **Persistently raised Hct > 0.51 in males, > 0.48 in females and:**
  - neurological symptoms
  - visual loss
  - abnormal bleeding
  - recent thrombotic event
  - raised WBC count and/or raised PLT count

**Raised Haematocrit**

- **Investigate in Primary Care**
  - Repeat FBC to confirm
  - Spleen exam
  - Check for pruritus
  - Blood film
  - Check O₂ saturation and exclude: COPD, sleep apnoea
  - Modify lifestyle factors: smoking
  - Check medication and stop diuretics

- **Criteria not met for urgent referral**

**Secondary cause identified?**

- **YES**
  - Hct < 0.54
  - Monitor FBC every 3 months
- **NO**
  - Hct ≥ 0.54
  - Refer to Haematology for venesection

**Seek Haematology opinion**

**URGENT REFERRAL**
Sheet 5. Thrombocytosis
Thrombocytosis is defined as a PLT count more than 450 x 10⁹/l. A common cause of thrombocytosis is iron deficiency.

\[
\text{PLT} > 450
\]

- **PLT > 1000**
- **PLT > 450 and:**
  - neurological symptoms
  - abnormal bleeding
  - recent thrombotic event:
    - DVT/PE, TIA/CVA, MI/unstable angina, vascular disease

**Criteria not met for urgent referral**

**Investigate in Primary Care**
- Repeat FBC to confirm
- Look for reactive causes
  - Infection
  - Inflammation
  - Neoplasia
- Check ferritin / iron kinetics
- Spleen exam
- Blood film

**Secondary cause identified?**
- **YES**
  - Act as per diagnosis
- **NO**
  - Seek Haematology opinion

**URGENT REFERRAL**
Sheet 6. Thrombocytopenia

Thrombocytopenia is defined as a PLT count below $150 \times 10^9/l$. Most patients with PLT > 50 are asymptomatic. **The risk of bleeding is increasing with a PLT count below 20.**

**PLT < 150**

- **Criteria not met for urgent referral**
  - Investigate in Primary Care
    - Repeat FBC to confirm
    - Blood film
    - Autoimmune profile
    - Alcohol history/liver biochemistry
    - Exclude viral infection
    - HIV/Hepatitis screen
    - Check medication

- **Secondary cause identified?**
  - **YES**
    - Act as per diagnosis
  - **NO**
    - Seek Haematology opinion

**Criteria for urgent referral**
- PLT <50
- PLT 50-100 and:
  - severe anaemia/neutropenia
  - splenomegaly
  - lymphadenopathy
  - pregnancy
  - upcoming surgery
  - history of thrombosis

**URGENT REFERRAL/ DISCUSSION WITH ON CALL HAEMATOLOGIST**

**PATIENTS WITH PLT <20 AND ACTIVE BLEEDING SHOULD BE DIRECTED TO A&E ASAP**