

Anaemia in Adults

About anaemia

Anaemia can be caused by:

- iron, folate, and B12 deficiencies
- Chronic Kidney Disease
- anaemia of chronic inflammation (ACI)
- bone marrow malignancy
- 10% of people aged > 65 years living in the community have anaemia. After age 50, the prevalence rises rapidly.
- Most anaemia is mild. Only 3% of women and 1.5% of men have haemoglobin levels < 110 g/L.
- In older people with anaemia, one third have nutrient deficiency, one third have ACI or CKD (or both).

Assessment

Anaemia is often asymptomatic and picked up as an incidental laboratory finding.

1. History - particularly weight loss, bone pain, and night sweats.
2. Examination including for jaundice, lymphadenopathy, and hepatosplenomegaly.
3. Investigations - determine the most likely cause by arranging or assessing all of the following:
 - FBC (indicates severity and whether other cell lines are involved).
 - Blood film (gives blood cell morphology which helps indicate the likely cause). This needs to be specifically requested on the laboratory form.
 - Reticulocyte count (indicates whether bone marrow is active). This needs to be specifically requested on the laboratory form. If reticulocyte count is:
 - low i.e., decreased production - indicates nutritional anaemias, anaemia of chronic inflammation, renal failure, or bone marrow failure or infiltration.
 - normal, assess in relation to the MCV.
 - high i.e., increased destruction - indicates haemolysis or acute blood loss.
 - Mean cell volume (MCV) identifies whether macrocytic (MCV > 98), normocytic (MCV 82 to 98), or microcytic (< 82).

Further investigations will depend on the results.

Result	Action
Increased reticulocytes	<p>Look for haemolysis or acute blood loss.</p> <p>Haemolysis:</p> <ul style="list-style-type: none"> • Determine whether it is congenital or acquired: • Ask about family history e.g., hereditary spherocytosis, thalassaemias, sickle cell anaemia. • Ask about medications. • May be auto-immune.
Macrocytic anaemia	<p>Consider alcohol excess, B12 deficiency or folate deficiency, hypothyroidism, primary bone marrow failure or bone marrow malignancy including multiple myeloma and secondary cancers.</p>
Microcytic anaemia	<p>Consider iron deficiency or anaemia of chronic inflammation. If neither of these, consider haemoglobinopathy such as thalassaemia, and request haemoglobinopathy screen.</p> <p>Anaemia of chronic inflammation</p> <ul style="list-style-type: none"> • Previously known as anaemia of chronic disease. • Can be caused by any systemic inflammatory condition e.g., malignancy, infection, autoimmune conditions. • May have normal or elevated ferritin and reduced serum iron. • May have an elevated CRP and other inflammatory markers. • Can present as either microcytic or normocytic anaemia.
Normocytic anaemia	<p>Consider recent haemorrhage, renal failure, thyroid or other endocrine abnormality, anaemia of chronic inflammation or bone marrow malignancy including multiple myeloma and secondary cancers.</p>
Cause is not obvious	<p>Measure:</p> <ul style="list-style-type: none"> • serum iron, ferritin, B12, folate • U&Es and LFTs • TSH • Serum protein electrophoresis plus urine Bence-Jones protein.

Note: When iron deficiency coexists with inflammatory disease, ferritin may be spuriously normal - it is an acute phase protein. Requesting additional iron studies may assist in these situations.

Management

Most anaemia is managed in general practice.

Identify the cause and treat the underlying problem e.g. blood loss, chronic inflammation, folate, or B12 deficiency.

If no identifiable cause, it may be appropriate to monitor until symptomatic or until a treatable cause is found. In the elderly, about one third of anaemias are unexplained¹.

If severe anaemia, consider whether the patient may benefit from red cell transfusion.

Request

Request haematology assessment if anaemia is associated with:

1. Blood film or other findings which are indicative of haematological disease, such as leukaemia, myelodysplasia, myeloma.
2. Abnormalities of other blood cell lines, such as thrombocytopenia, neutropenia.
3. Investigations suggest haemolysis, such as reticulocytosis, hyperbilirubinaemia, elevated LDH, absent haptoglobin, positive direct antiglobulin test.
4. Include CBC, blood film, reticulocytes result, and any other relevant tests, in your referral.
5. Urgent or written advice is available.

Reference

1. Guralnik JM *et al.* **Anemia in the elderly: a public health crisis in hematology.** *Hematology Am Soc Hematol Educ Program.* 2005:528-32.