

Haematology Revision

<p>Anaemia</p>	<ul style="list-style-type: none"> - ↓haemoglobin (Hb) in blood categorised by the associated mean corpuscular volume (MCV) of RBCs: <ol style="list-style-type: none"> 1. microcytic = ↓MCV (usually due to iron deficiency or thalassaemia) 2. normocytic = normal MCV (usually due to chronic disease) 3. macrocytic = ↑MCV, this is further split into megaloblastic (large immature/dysfunctional RBCs e.g. vitamin B₁₂ & folate deficiency) & non-megaloblastic (alcoholism & haemolytic) - symptoms: general tiredness, lethargy, pallor & can ⇒ tachycardia & SOB - treatment: see below for specifics, if patient is experiencing end stage symptoms &/or has heart disease consider a blood transfusion - NB. this is a serious problem in patients with heart disease as the heart's oxygen requirements become harder to maintain
<p>Iron deficiency anaemia <i>microcytic, hypochromic</i> <i>(small RBCs with ↓Hb)</i></p>	<ul style="list-style-type: none"> - as well as ↓Hb & ↓MCV, blood can also have ↓iron (Fe), ↓ferritin & ↑transferrin/TIBC (≡body's total iron-binding capacity which is high because there is less iron to bind so more unbound transferrin is free) - causes: Fe deficiency, GI bleed, chronic disease (e.g. crohn's ⇒malabsorption), thalassaemia trait & lead poisoning - symptoms: tiredness, lethargy, pallor, koilonychia (spoon shaped nails), angular stomatitis (cracked corners of mouth) & can ⇒ tachycardia & SOB - tests: bloods (inc. iron studies) + investigate blood loss everywhere (especially GI tract, with endoscopy of stomach & colon), Hb electrophoresis (looking for thalassaemia) & bone marrow biopsy - treat underlying cause, iron supplements +/- blood transfusion (depending on symptoms & Hb level, usually transfuse if Hb < 80g/dL) - NB. ferritin is an acute phase protein, therefore it will also be raised during an inflammatory response
<p>Anaemia of chronic disease <i>normocytic</i></p>	<ul style="list-style-type: none"> - chronic disease ⇒ ↓RBC lifespan, ↓Fe stores & ↓erythropoietin (hormone produced by kidney that normally ⇒ ↑RBC production) - due to: malignancy, chronic disease infection/inflammation - tests: bloods (↓Fe, ↓TIBC, ↑ferritin & check for signs of infection/inflammation e.g. ↑WBC & ↑CRP/ESR) - treat cause + iron supplements +/- transfusion
<p>Folate def anaemia <i>macrocytic, megaloblastic</i></p>	<ul style="list-style-type: none"> - ↓folate ⇒ impaired DNA synthesis ⇒ megaloblastic bone marrow - can ⇒ pancytopenia (=triad of symptoms): ↓RBCs (anaemia), ↓WBCs (neutropenia) & ↓platelets (thrombocytopenia) - causes: nutritional (e.g. starvation, alcoholism), malabsorption (e.g. crohn's, celiac, etc.), excess utilisation (e.g. pregnancy, malignancy) or medication related (e.g. methotrexate) - give oral folic acid
<p>Vitamin B₁₂ def anaemia <i>macrocytic, megaloblastic</i></p>	<ul style="list-style-type: none"> - can be due to pernicious anaemia (<i>see below</i>) or malabsorption (e.g. crohn's, celiac disease, post gastrectomy surgery) - treat with: B₁₂ injections