

Approach to Anaemia & Thrombocytopenia

It has to be either **LOSS**, **OVERDESTRUCTION** or **UNDERPRODUCTION**

Look for blood loss:

takes about 45 min for peripheral Hb to drop after an episode of heavy bleeding

Blood pressure: need to lose 500 ml of blood before significant change in blood pressure can be detected.

A normal person has
60 – 80 ml/kg of blood

Need to lose AT LEAST 15% before significant circulatory effects are seen

Heart rate: Tachy if blood loss, brady if vasovagal syncope

Peripheral pulse -

Clinical signs of peripheral shutdown

Highest useful heart
rate = 220 minus age

Look for overdestruction:

LDH in absence of any other liver enzyme elevation = great marker of haemolysis

Then **Coombs test** for antibody-coated platelets

Then count the **reticulocytes** (will be increased)

Reckon its haemolysis?

What's the cause?

- Mechanical eg. heart valve
- Reticulo-endothelial (hyper-splenism)
- Infective (eg. haemolytic-uraemic syndrome where enterohaemorrhagic e.Coli toxin attacks the red blood cells; or when malarial parasites eat them from the inside)

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- Congenital (**glucose-6-phosphate dehydrogenase (G6PD) deficiency**)
- Autoimmune (antibodies versus the RBC! These antibodies may arise spontaneously, in association with certain diseases (SLE, lymphoma, chronic lymphatic leukemia), or after stimulation by a drug (eg, -methyldopa, levodopa).
- Paraneoplastic (as above)

TRANSFUSIONS

O negative = universal donor

The army carries O positive because most combatants are male

Takes 10 minutes to get cross-matched blood packs back from the blood bank

SO WHAT GOES WRONG: mismatch recation, infection,

80% of complications arise from the wrong blood being transfused

90% of mismatch transfusions are due to the DOCTOR's ERROR

Risk of infectious agent being in the bag:

- 1 in 1,000,000 for HIV
- 1 in 200,000 for Hep C
- 1 in 40,000 for bacteria

RISK IS MUCH GREATER IN PLATELET TRANFUSIONS!

(Platelets are kept at room temperature)

Common complication is drowning!

Patients requiring transfusion are already in a state of high cardiac output (the heart is trying to chase the last remaining haemoglobin around the body as much as possible) and thus overloading them with extra fluid will result in extravasation of this fluid into the lungs, i.e **PULMONARY OEDEMA**