

Scottish Standard for the Optimisation of Preoperative Anaemia

By January 2019, all patients who are anaemic who present for elective or urgent surgery (with an anticipated blood loss of > 500 ml or >10% blood volume) in Scotland should have this anaemia investigated and treated prior to surgery.

Preoperative anaemia is associated with increased postoperative morbidity and mortality, and with increased transfusion requirements. Treating iron deficiency with iron supplements can reduce the need for blood transfusion. It may also reduce the length of hospital stay and costⁱ.

Process

1. Any patient having surgery with blood loss expected to be greater than 500 ml/10% of blood volume should have an FBC and haematinics taken as early as possible in the pathway*

**This may be in primary care (pre-referral), surgical outpatients, pre-assessment and other referral areas e.g. endoscopy*

2. The diagnosis of anaemia should be made using the adapted AAGBI Consensus algorithm (Figure 1)ⁱⁱ.

3. Units should develop pathways for the management of anaemia in patients requiring urgent surgery:

a. If the anaemia is an iron deficiency anaemia (IDA) or anaemia of chronic inflammation with iron deficiency, consider IV iron as early as possible before surgery (see figure 2).

b. If the anaemia is macrocytic or anaemia of chronic inflammation without iron deficiency, seek urgent expert Haematology advice.

4. Units should develop pathways for the management of anaemia in patients requiring elective surgery:

a. Where anaemia is diagnosed, appropriate investigation and management should be undertaken before surgery, aiming to avoid any delay to the procedure.

b. During investigation, the possibility of a malignancy must be considered. Pathways for the investigation of a possible malignancy are to be agreed at a local level.

c. If an IDA is diagnosed, first-line treatment should be with oral iron*. Surgical pre-assessment clinics should make provision for the delivery of IV iron.

**This may be prescribed by the pre-assessment clinic, GP, or purchased over-the-counter by the patient.*

d. A patient with a macrocytic anaemia should be discussed with the patient's GP.

e. Patients with anaemia of chronic inflammation without iron deficiency are a challenging group who may have lower target haemoglobin. Expert advice should be sought in the management of this group.

f. Patients with anaemia of chronic inflammation with iron deficiency (a functional iron deficiency) should be treated as iron deficient. However, the first line of treatment should be with IV iron.

Figure 1 – Diagnosis of anaemiaⁱⁱⁱ

The recent AAGBI consensus statement recommends a single haemoglobin value of 130g/L as the diagnosis and treatment target in both males and females. However, units may wish to continue to use the WHO definition of anaemia (male <130g/L, female <120g/L). In patients age 60 ferritin up to 50 mcg/L may still reflect iron deficiency and should be treated.

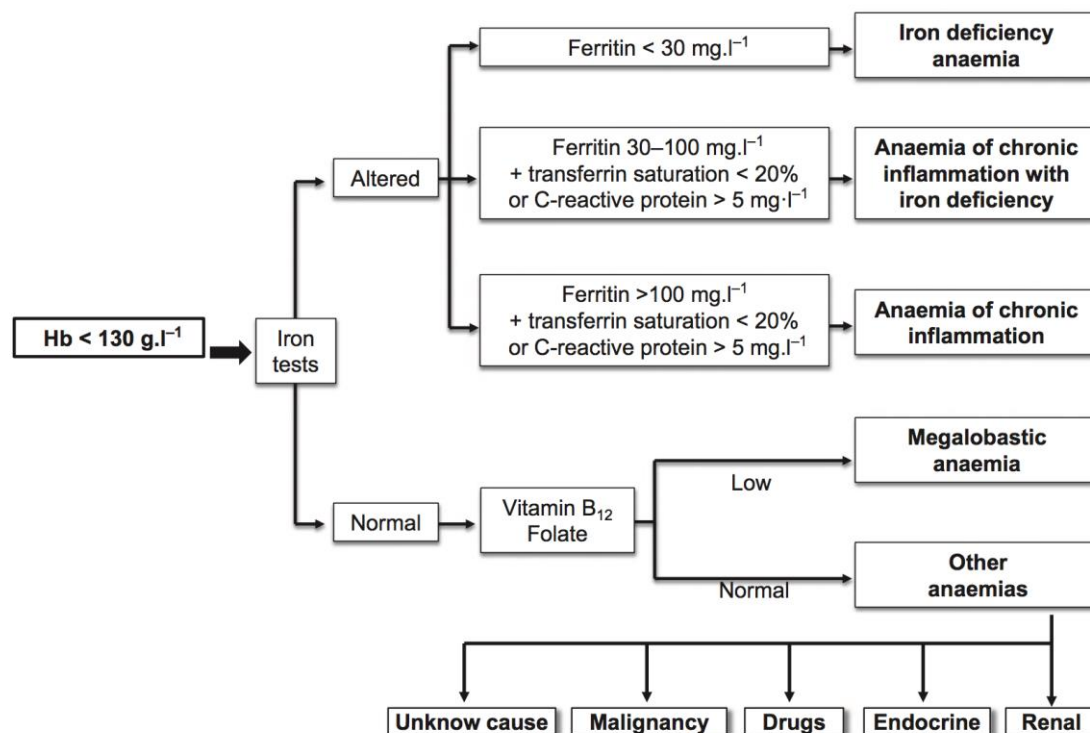


Figure 2 – IV iron

IV iron should ideally be given 4-6 weeks before surgery. With urgent surgery, this is often not an available timescale. As IV iron replenishes stores in preparation for the accelerated erythropoiesis seen following blood loss, it should be considered up to and including on the day of surgery as this will still reduce the need for perioperative transfusion. Remember, IV iron can also be given postoperatively.

References

- ⁱ National Institute for Health and Care Excellence 2016. Blood Transfusion. NICE quality standard 138.
- ⁱⁱ Muñoz M, Acheson AG, Auerbach M *et al*. International consensus statement on the peri-operative management of anaemia and iron deficiency. *Anaesthesia* 2017; **72**: 233-47.
- ⁱⁱⁱ Ibid.