

Preoperative anaemia

A case study

Iron deficiency anaemia (IDA) is an important public health problem in Australia with 57,518 potentially preventable hospitalisations for IDA in 2017-18.¹



Case study

Presentation



Evelyn Rossi is a 69-year-old widow who is awaiting a knee replacement. She visits her general practitioner (GP) with shortness of breath (SOB) and to discuss a letter from the preoperative clinic.

Both Evelyn and the GP received the letter detailing how to assess and optimise haemoglobin pre-surgery.

Evelyn is pale, but her physical examination is non-remarkable.

Her history includes a myocardial infarction and gastro-oesophageal reflux for which she takes atenolol, low-dose aspirin and esomeprazole. She has had no major surgical procedures. She has no gastro-intestinal symptoms apart from mild loss of appetite for a few months. Her weight is stable.

Evelyn lives alone but her daughter visits regularly. She prepares her own meals and eats small amounts of red meat and chicken.

What laboratory investigations would you perform?

The GP orders a full blood count, iron studies, C-reactive protein (CRP) and renal function tests, and orders a chest x-ray to investigate Evelyn's SOB. The blood results are also forwarded to the hospital's preoperative clinic.

Test	Range	Result	A week later Evelyn returns for her results. Red cell indices and iron studies are consistent with IDA. CRP and renal functions are normal. Her chest x-ray is clear and the conclusion is SOB due to anaemia.
Hb g/L	135-175	108	
MCV fL	80-98	78	
MCH pg	27-33	26	
RDW %	12-15	17	
Ferritin mcg/L	30-300	8	
Comments:	Microcytic, hypochromic blood picture with elliptocytes		

What would be your first line treatment?

Evelyn is advised to take iron tablets with at least 100 mg of elemental iron. A two-week follow-up appointment is made. She is referred to a gastroenterologist for investigation of the cause of her IDA.

Evelyn does not tolerate the oral iron and has been nauseous despite taking them before bed. The GP suggests alternate days dosing.

The surgery booked for 4 weeks, is deferred in order to optimise Evelyn's haemoglobin. The GP discusses with the cardiologist cessation of her low-dose aspirin prior to surgery to reduce her bleeding risk.



Evelyn's inability to tolerate oral iron necessitates referral to the haematology clinic for consideration of an intravenous iron infusion.

Evelyn receives an outpatient iron infusion with a good response.

Gastroenterology examinations are clear and her IDA is attributed to poor diet and reduced absorption due to esomeprazole.

Evelyn has her surgery eight weeks after her original date. Her preoperative ferritin was 146 mcg/L and her haemoglobin was 139 g/L, which reduced to 94 g/L postoperatively. She did not require a red cell transfusion perioperatively and her ferritin levels were considered adequate to support erythropoiesis and recover from her blood loss.

For this and other case studies related to IDA visit <https://bloodsafelearning.org.au/>

¹ Australian Institute of Health and Welfare 2019. Admitted patient care 2017–18: Australian hospital statistics. Health services series no. 90. Cat. no. HSE 225. Canberra: AIHW.