Iron deficiency anaemia

Examination

Consider other forms of anaemia

Investigations

Coeliac serology

Coeliac antibody positive

Refer to gastroenterology

Coeliac antibody negative

Assess likelihood of occult GI blood loss

Likely occult GI blood loss

Unlikely occult GI blood loss

Assess and treat underlying causes

Iron replacement

Monitor response to iron therapy

Responsive

Non-responsive

Follow-up

Relapse?

Alarm symptoms or signs

Consider other forms of anaemia

IDA confirmed

History

Coeliac antibody positive

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1 Iron deficiency anaemia

Quick info:

**IDA in adults**

Characteristics:

- anaemia with low serum ferritin and/or
- anaemia responding to iron therapy

Associations:

- menorrhagia
- gastrointestinal (GI) blood loss
- GI iron malabsorption
- genito-urinary symptoms
- diet
- obvious blood loss
- blood donation

Key management points:

- serum ferritin is usually the only test required to confirm a diagnosis of IDA
- in chronic disease (e.g. with raised CRP) ferritin may be falsely normal and Hb response (1 g/dl in 2 weeks) to iron therapy is used as evidence of IDA
- all patients with a diagnosis of IDA should
  - be screened for coeliac disease with a serological blood test
  - have urinalysis performed for haematuria

All

- males and
- non-menstrurating females and
- menstruating females with GI symptoms or a strong family history of GI cancer* or aged 50 and over should be referred to a gastroenterologist for further investigations, urgently if cancer is suspected

*strong FH of cancer = one first degree relative diagnosed under age 45 or two affected first degree relatives

References:


2 Provenance

Quick info:

Last updated 17th Nov 2011

Authors:

Dr J Huddy GPSI gastro
Dr Noble, Consultant Haematologist
Dr Michell, Murray, Hussaini, Dalton, Beckly, Fortun, Stableforth. Consultant Gastroenterologists
Royal Cornwall Hospital, 2011

3 History

Quick info:

Consider the cause of the anaemia

- gastrointestinal alarm and non-alarm symptoms
- menstrual history
- malabsorption
Iron deficiency anaemia

• nutritional deficiency
  • vegetarians are at increased risk of IDA
  • rarely a cause unless increased demands e.g. adolescents, pregnancy, lactation, menstruation
• NSAIDs / aspirin / warfarin
• haematuria (dipstick urine)
• blood donation

4 Examination

Quick info:
Abdominal examination including PR examination
Dipstick urine for haematuria (1% of IDAs will have a renal tract malignancy)

5 Alarm symptoms or signs

Quick info:
Urgent 2 week referral to gastroenterology for those with alarm features of
Upper GI cancer:
  • dysphagia
  • unintentional weight loss
  • persistent vomiting
  • epigastric mass
  • age > 55 with unexplained and persistent recent onset dyspepsia
  • upper GI cancer referral proforma - click here
Lower GI cancer:
  • Hb < 11g/dl in men and < 10g/dl in non-menstruating women
  • R abdominal mass
  • intraluminal (not pelvic) rectal mass
  • >6w rectal bleeding and/loose stools age 40-60
  • >6w rectal bleeding alone age > 60
  • >6w loose stools alone age > 60
  • lower GI cancer referral proforma - click here

6 Investigations

Quick info:
To diagnose IDA:
Perform ferritin and CRP
IDA is defined by a low serum ferritin or haemoglobin that responds to iron therapy (1 g/dl over 2 weeks)
Serum ferritin is a marker of total body stores of iron however ferritin is an acute phase reactant so maybe falsely normal in the context of chronic disease
  • ferritin < 15 mcg/l defines IDA
  • ferritin 15-30 mcg/l with a normal CRP or 15-70mcg/l with a raised CRP is an equivocal result - it might be IDA and would warrant a trial of iron
  • ferritin > 30 mcg/l with a normal CRP or >70 mcg/l with a raised CRP is seldom IDA - if in doubt give trial of iron
If the ferritin result is equivocal then give a trial of iron: give iron sulphate 200mg once a day for a week then twice a day for a week. The Hb will increase by 1g/dl or more over these 2 weeks if the patient is iron deficient.
Dipstick urine for haematuria (1% of IDAs will have anaemia due to a renal tract malignancy)
7 Consider other forms of anaemia

Quick info:
Anaemias most commonly confused with iron deficiency anaemia (IDA):
• anaemia of chronic disease which is normocytic or mildly hypochromic:
  • ferritin is normal to high
  • distinguished by being refractory to iron therapy
• thalassaemia trait:
  • normal ferritin levels
  • disproportionately low mean corpuscular volume (MCV) level for severity of anaemia
  • perform haemoglobin electrophoresis to confirm diagnosis:

9 Coeliac serology

Quick info:
Perform coeliac serology (anti-tissue transglutaminase antibody)
If the clinician suspects cancer do not delay referral pending this result (this test takes 10-14 days @ RCH)

12 Assess likelihood of occult GI blood loss

Quick info:
Those likely to have occult GI blood loss are:
• men
• non-menstruating women
• menstruating women with
  • GI symptoms or
  • strong family history of GI cancer* or
  • age 50 or over
Those unlikely to have occult GI blood loss are:
• menstruating women under 50 with no GI symptoms and no strong family history of GI cancer*
*strong FH of cancer = one first degree relative diagnosed under age 45 or two affected first degree relatives

16 Assess and treat underlying causes

Quick info:
Consider
• heavy menstrual bleeding
• haematuria
• nutritional causes
• other evidence of blood loss

17 Iron replacement

Quick info:
Give ferrous sulphate 200mg once a day for a week then twice a day to continue
Haemoglobin concentration should rise by about 2g/dL every 3 weeks
If ferrous sulphate is not well tolerated (nausea, constipation, diarrhoea) then
Iron deficiency anaemia

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• drop the dose to once a day or
• take with food (which will reduce iron absorption by 40%) or
• change to a different iron preparation (eg ferrous fumarate, ferrous gluconate or iron suspensions) which may be tolerated better than ferrous sulphate
• add ascorbic acid 50mg/day to improve absorption

If iron cannot be tolerated orally then intravenous iron can be given in hospital as a day case procedure

Blood transfusion is a last resort in severe anaemia

NB: Be aware that oral iron may adversely reduce absorption of other medications - see BNF

18 Monitor response to iron therapy

Quick info:
Check full blood count (FBC) 2-4 weeks after starting iron (earlier if symptoms are severe) to assess response to treatment:
Hb should rise by about 2g/dL every 3 weeks
Recheck thereafter according to clinical judgment
Oral iron should be taken until the haemoglobin concentration returns to normal and then for a further 3 months to replenish body stores then stop iron
BSG suggests checking Hb and MCV 3 monthly for a year then after another 12 months
If Hb or MCV drop below normal then oral iron should be given again (reserve ferritin testing for when there is a doubt)
Further investigation is only necessary if the Hb and MCV cannot be maintained in this way

20 Non-responsive

Quick info:
Consider further investigation when iron replacement fails if:
• patient concordance is adequate (most common cause of treatment failure)
• iron dosage prescribed is sufficient
Reconsider diagnosis in patients who fail to respond to iron replacement therapy and consider re-testing for B12.

21 Responsive

Quick info:
If anaemic symptoms and blood tests improve with iron replacement, no further investigation is recommended.

23 Follow-up

Quick info:
Continue iron supplements for 3 months after full blood count (FBC) tests have returned to normal
Routinely test every 3 months for 1 year, then again after 1 year

24 Relapse?

Quick info:
If Hb or MCV drop below normal then oral iron should be given again (reserve ferritin testing for when there is a doubt of iron deficiency)
Further investigation is only necessary if the Hb and MCV cannot be maintained in this way
Thank you
Iron deficiency anaemia

Evidence summary for Iron deficiency anaemia