Background information

Patient information

Key messages for this pathway

Suspected iron deficiency anaemia

Confirm diagnosis

Additional investigations: exclude coeliac disease and haematuria

Consider possible cause

Menorrhagia

Go to heavy menstrual bleeding (HMB)

Pre-menopausal women with no GI symptoms: start oral iron

Follow up in primary care

TTG elevated

Refer to nurse led coeliac clinic

Further assessment and investigation

Refer to clinic providing full IDA assessment and follow up with access to all appropriate tests

Cause identified, GP to manage

Recurrent iron deficient anaemia: re refer to gastroenterology

Cause unidentified

No new symptoms or weight loss and good response to iron

Discharge to GP for monitoring

Recurrent iron deficient anaemia: re refer to gastroenterology

Cause identified and managed appropriately

No cause identified, new symptoms or poor response to iron

Further investigation in secondary care

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Iron deficiency anaemia

1 Key messages for this pathway

Quick info:
This pathway has been locally developed for South West Hampshire.
Key messages for this pathway:
- only 12% IDAs have colon cancer
- menorrhagia is the commonest cause
- diet is rarely a cause
- don't forget to ask about blood donation
Contributors to this pathway:
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2 Background information

Quick info:
Scope:
- confirming the cause of anaemia as iron deficiency anaemia (IDA)
- iron deficiency anaemia in those over age 18 years
Out of scope:
- symptoms and signs associated with anaemia in general
- other causes of microcytosis
- haemolytic anaemia
- haemoglobinopathies
- causes of macrocytosis
- red cell aplasia
- anaemia associated with chronic disease
Definition:
- anaemia due to an absolute deficiency of body iron
- characterised by reduced red blood cell count with decreased red cell size (microcytosis) and decreased haemoglobin concentration (hypochromia) caused by iron deficiency
Blood test results indicating anaemia:
- full blood count (FBC) results indicating anaemia:
  - haemoglobin (Hb) levels less than:
    - 130g/L in male patients
    - 120g/L in female patients
    - 110g/L in pregnant patients
- results indicating iron deficiency:
  - reduced mean corpuscular volume (MCV):
    - less than 75fL established microcytic anaemia
  - reduced mean corpuscular haemoglobin (MCH):
    - less than 27picograms establishes hypochromic anaemia
  - anaemia responding to iron
- NB: please check test results against the normal reference range for local laboratory
Prevalence:
- iron deficiency anaemia is common in females and particularly in those of child-bearing age
- 52% pregnant female population in developing world

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**Iron deficiency anaemia**

**Medicine > Haematology and haemostasis > Iron deficiency anaemia**

- 23% pregnant female population in developed world
- 14% premenopausal female population in developed world
- 2-5% among adult male and postmenopausal female population in the developed world

**Associations:**
- menorrhagia (most common cause in premenopausal female patients)
- gastrointestinal (GI) blood loss (most common cause in male and postmenopausal female patients):
  - peptic ulcer disease, gastric erosions, oesophagitis
  - malignancy
  - coeliac disease
  - non-steroidal anti-inflammatory drugs (NSAID) or aspirin use
  - enteric infections or inflammatory bowel disease
  - haemorrhoids
- genito-urinary symptoms:
  - blood in urine
  - abnormal menstrual history in female patients
- diet, eg:
  - vegetarian or vegan (iron more difficult to absorb from vegetables than meat)
  - adolescents
  - excessive alkaline beverages (may inhibit iron absorption)
  - malabsorption, eg coeliac disease, past gastrectomy
- pregnancy
- familial haematological disorder
- obvious blood loss, eg substantial nose bleed, recent surgery
- in rare cases, intravascular haemolysis
- in tropical countries, hookworm infestation is a common cause:
  - consider as a potential cause in those who have recently travelled to such areas
- blood donation

**Key management points:**
- serum ferritin is usually the only test required to confirm a diagnosis of IDA
- all patients with a diagnosis of IDA should be screened for coeliac disease:
  - perform anti-tTG or anti-endomysial antibody test
- faecal occult blood testing is **not** recommended as an investigation
- all males and females aged over age 50 years with unexplained IDA and premenopausal females with GI symptoms or a strong risk of GI cancer should be referred to a gastroenterologist for further investigations

**References:**

### 3 Patient information

**Quick info:**


### 4 Suspected iron deficiency anaemia

**Quick info:**
Iron deficiency anaemia

Presenting features are common to most anaemias. Many iron deficiency anaemias will present as an incidental finding. Obvious gastrointestinal/uterine/urinary tract bleeding should be managed according to the appropriate pathway. There may be gradual onset of any of the following symptoms:

- fatigue, lethargy, weakness
- shortness of breath
- palpitations
- headache
- lightheaded or dizziness
- pallor of eyes, lips, skin and nails
- poor condition of nails, lips and tongue
- hair loss

5 Confirm diagnosis

Quick info:
Would be suspected with:

- low MCV and MCH (microcytic hypochromic anaemia)

Confirm iron deficiency by measuring serum ferritin and CRP. If ferritin normal, but CRP high, measure transferrin and transferrin saturation (iron studies).

A low MCV with normal haemoglobin does not require any further investigation in the absence of symptoms.

6 RED FLAGS: age > 60yrs and Hb <110g/L

Quick info:
Consider referral of asymptomatic patient under 2 week wait if:

- age > 60 years
- Hb <110g/L

National statistics show that the probability of colorectal cancer is 12% in asymptomatic people with iron deficiency anaemia. The risk will be higher if the above criteria are used.

7 Additional investigations: exclude coeliac disease and haematuria

Quick info:
Check for coeliac disease with tissue transglutaminase (TTG).
Urine dipstick (macroscopic and asymptomatic microscopic haematuria can cause IDA, see Asymptomatic microscopic haematuria and macroscopic haematuria pathways).

N.B. Faecal occult blood is **not** recommended as an investigation in this context.

9 Consider possible cause

Quick info:
Possible causes include:

- gastrointestinal (GI) blood loss
- menstrual loss
- malabsorption
- nutritional deficiency:
  - rarely a cause alone, unless there are increased physiological demands for iron, eg during adolescence, pregnancy, lactation, or in menstruating women
  - vegans have an increased risk of IDA

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Iron deficiency anaemia

11 Pre-menopausal women with no GI symptoms: start oral iron

Quick info:
Treat for 3 months with oral iron supplements and reassess haemoglobin and ferritin and any symptoms.
If oral iron is not well tolerated (nausea, constipation, diarrhoea) consider:
• taking with or immediately after food (however taking with food reduces iron absorption by about 40%)
• reducing the daily dose
NB: although iron preparations are best absorbed on an empty stomach they can be taken after food to reduce gastro-intestinal side-effects. However, iron tablets should not be taken within one hour before or two hours after eating or drinking the following products: tea, coffee, milk, eggs and whole grains as these products can reduce the absorption of iron. Meat and products containing vitamin C can increase the absorption of iron.

12 TTG elevated

Quick info:
The nurse led coeliac clinic referral will generate an endoscopy and subsequent follow up.
Please do NOT start a gluten free diet, since this can mask histological findings on biopsy.

13 All other patients: start oral iron

Quick info:
If oral iron is not well tolerated (nausea, constipation, diarrhoea) consider:
• taking with or immediately after food (however taking with food reduces iron absorption by about 40%)
• reducing the daily dose
NB: although iron preparations are best absorbed on an empty stomach they can be taken after food to reduce gastro-intestinal side-effects. However, iron tablets should not be taken within one hour before or two hours after eating or drinking the following products: tea, coffee, milk, eggs and whole grains as these products can reduce the absorption of iron. Meat and products containing vitamin C can increase the absorption of iron.

15 Further assessment and investigation

Quick info:
All patients should be considered for further investigation, which will usually be with OGD and colonoscopy unless:
• patient preference for no investigation
• unable to lie flat
• previous failed colonoscopy
• extreme frailty or terminal illness
Local audit data shows that only 60% of patients with iron deficiency progress for further investigations due to the above limitations.

16 Follow up in primary care

Quick info:
Further investigation is not necessary unless new symptoms arise suggesting gastrointestinal disease, or the anaemia fails to respond to oral iron.

19 Cause identified, GP to manage
Iron deficiency anaemia
Medicine > Haematology and haemostasis > Iron deficiency anaemia

Quick info:
Benign cause identified, as dictated by investigation results.
Patient discharged to GP to:
  • treat underlying cause (as per treatment plan provided with diagnosis)
  • replenish iron store:
    • give iron until Hb normal and ferritin >50mcg/L

24 Discharge to GP for monitoring

Quick info:
Give iron until Hb normal and ferritin >50mcg/L and monitor Hb 3 monthly for 1 year.
Monitor weight.
Iron deficiency anaemia

Key Dates

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Evidence summary for Iron deficiency anaemia

References

This is a list of all the references that have passed critical appraisal for use in the pathway Iron deficiency anaemia

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