Primary Care and Laboratory Diagnosis and Treatment of Anaemia

Tim Watts
Laboratory Manager
Blood Sciences
Northern Devon Healthcare NHS Trust
Barnstaple
Investigation and Referral Pathways for Anaemia

1. Investigation and referral pathway for microcytic and/or hypochromic anaemia.

2. Investigation and referral pathway for normocytic or macrocytic anaemia.

3. Treatment of iron deficiency anaemia.

4. Investigation of iron deficiency anaemia.
Investigation/Referral Pathway for Microcytic/Hypochromic Anaemia

1. Low Hb Low MCV and/or MCH
   - Repeat FBC Ferritin Reticulocytes Film

2. Ferritin LOW
   - Reticulocytes normal
     - Iron Deficiency Anaemia GP to investigate and treat anaemia + cause
   - Reticulocytes raised
     - Bleeding Refer gastroenterology

3. Ferritin Normal
   - Reticulocytes normal
     - Is ACI suspected (age, inflammation, cancer)
       - Yes Refer to haematology
       - No Hb electrophoresis
     - Reticulocytes raised Refer gastroenterology
Iron Deficiency
Investigation/Referral Pathway for Normocytic or Macrocytic Anaemia

Low Hb
Normal or high MCV

Repeat FBC, B12, Folate, reticulocytes, LFT, TFT, Renal, Film

Low B12

Low Folate

Is Bilirubin and / or retic count raised?

No

B12 deficiency GP to treat

Yes

Folate deficiency GP to treat

Reticulocytes raised

Is the bilirubin raised?

No

Haemolysis Refer to haematology

Yes

Reticulocytes NOT raised

Globulins raised

Abnormal TFT

eGFR <30 all else normal

GP to treat or refer to endocrinology

Bleeding Refer gastro

Myeloma or ACI refer to haematology

Refer to renal

?MDS refer haematology
Pernicious anaemia
Treatment of Iron Deficiency Anaemia (IDA)

1. IDA confirmed

2. Treat cause if possible

3. Oral Iron, e.g. FeSO4, 200mg BD

4. Tolerated?
   - No: Consider parenteral iron
   - Yes: Check FBC monthly

5. Check FBC monthly

6. FBC normal?
   - No: Consider further investigation and blood transfusion if anaemia is severe
   - Yes: Continue with iron for 3 months

7. Continue with iron for 3 months

8. Recheck FBC 3 monthly for 1 year then yearly treating as necessary

9. Normal FBC maintained?
   - No: No further action unless further symptoms
   - Yes: Normal FBC maintained
Investigation of Iron deficiency anaemia

Evidence of iron deficiency
* Low Hb * low ferritin * low MCV/MCH

Check coeliac serology (Anti TTG)

-ve

Pre-menopausal woman

Colonoscopy or CT colography and OGD

Normal

Upper GI symptoms

Yes

OGD

Normal

FH of colorectal cancer*

Yes

Colonoscopy or CT colography

Normal

Manage detected condition

Iron replacement, investigate further if response inadequate

Confirm coeliac disease with OGD / small bowel biopsy

+ve

*2 affected 1st degree relatives or 1 affected <50yo