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Management of Iron Deficiency Anaemia in Pregnancy

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Guidelines Definition

Clinical guidelines are systemically developed statements that assist clinicians and patients in making decisions about appropriate treatments for specific conditions.

They allow deviation from a prescribed pathway according to the individual circumstances and where reasons can be clearly demonstrated and documented.

Minor Amendments

If a minor change is required to the document, which does not require a full review please identify the change below and update the version number.

Type of change	Why change made	Page number	Date of change	Version 1 to 1.1	Name of responsible person

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1. Introduction

This document is a clinical guideline designed to support safe and effective practice when managing a patient with iron deficiency anaemia in pregnancy.

Iron deficiency anaemia is defined as a haemoglobin (Hb) value less than 2 standard deviations below the mean value for a healthy matched population. Iron deficiency anaemia is the commonest medical disorder in pregnancy. Pregnancy causes 2-3 fold increase in requirement for iron and 10-20 fold increase in requirement for folate. Iron deficiency anaemia causes maternal morbidity by increased susceptibility to infections, poor work capacity and performance and disturbances of postpartum cognition and emotions.

This guideline is cross referenced to Standard for Healthcare Services 7.

2. Aims

To provide support for clinical decision making for healthcare professionals looking after pregnant women.

This guideline applies to all members of staff including midwives, obstetric medical staff and nursing staff on the early pregnancy assessment unit and gynaecology ward.

3. Management of Iron Deficiency Anaemia in Pregnancy

A flow chart summarising the management of iron deficiency anaemia in pregnancy can be found in Appendix 1.

3.1 Clinical features

- Iron deficiency anaemia in pregnancy is often asymptomatic and may be diagnosed on routine screening.

Women may present with tiredness, dizziness, fainting irritability, poor concentration and lethargy and in these circumstances haemoglobin should be tested.

- Storage iron is depleted before a fall in Hb and as iron is an essential element in all cells, symptoms of iron deficiency may occur even without anaemia: these include fatigue, irritability, poor concentration and hair loss.
- Signs of iron deficiency anaemia **can** occur in the absence of a low Hb. In this instance it would be diagnosed by a full blood count with a reduced MCV (Mean Cell Volume) and MCHC (Mean Corpuscular Haemoglobin Concentration).

3.2 Screening

- Full blood count (FBC) should be assessed at booking and at 28 weeks.
- Phone the woman with the 28 week FBC result and document the result in her hand-held notes at 31 weeks when seen by the community midwife.
- If the woman is having an elective caesarean section (CS), check FBC result from 28 weeks when booking the CS at around 36 weeks. If < 105 g/l, recheck FBC at time of booking CS.
- Intrapartum blood loss of more than 500 mls, haemoglobin level should be checked within 48 hours.

3.3 Diagnosis

- Iron deficiency anaemia presents with low Hb, reduced MCV and MCHC.
- The definition of iron deficiency anaemia in pregnancy is Hb levels of:
 - <110g/l in the first trimester
 - <105 g/l in the second and third trimesters
 - <100 g/l in the postpartum period.
 (British Committee for Standards in Haematology 2019)
- Serum ferritin is the most useful and easily available parameter for assessing iron deficiency. Levels below 15 µg/l are diagnostic of established iron deficiency. A level below 30 µg/l in pregnancy should prompt treatment.

- Serum ferritin should be routinely checked first with patients with haemoglobinopathy i.e. an inherited disorder involving an abnormality in the structure of haemoglobin.
- Serum ferritin should also be checked in women at risk of iron deficiency (e.g. those following a vegetarian, vegan diet).
- Women with a normal Hb but a low MCV should have their ferritin checked and if ferritin is $<30\mu\text{g/l}$, oral iron should be commenced.

4. Treatment

4.1 Dietary Advice

- All women should be counselled regarding diet in pregnancy including detail of iron rich foods sources and factors that might inhibit or promote iron absorption.
- Foods rich in iron include red meat, fish and poultry.

Factors Influencing the Absorption of Iron

Factors that inhibit iron absorption	Factors that enhance iron absorption
Foods rich in calcium	Haem iron
Tannins in tea	Ferrous iron
Phytates in cereals	Ascorbic Acid

4.2 Oral Iron

- Dietary changes alone are insufficient to correct established iron deficiency and iron supplements are necessary.
- Ferrous iron salts are the preparation of choice e.g. ferrous sulphate, ferrous fumarate and ferrous gluconate.
- The oral dose for iron deficiency anaemia should be 40-80mg of elemental iron daily ([BSH Guideline 2019](#)).
- **Our preferred first line treatment within obstetrics is Ferrous Sulphate 200mg once daily.**
- The table below details the dose and elemental iron content of the iron preparations available.
- The Cwm Taf Morgannwg Formulary can be accessed [here](#) and gives the comprehensive up to date list of products available.

Table 1. Dose and elemental iron content per **dose unit** of currently available preparations.

Preparation	Dose per tablet	Elemental iron	No of tablets per day
Ferrous Sulphate Tablets	200mg	65mg	1
Ferrous Fumarate Tablets (Fersaday®)	210mg	68mg	1
Ferrous Gluconate Tablets	300mg	35mg	1-2
Ferrous Fumarate Capsules (Galfer®)	305mg	100mg	1
Sodium feredetate trihydrate oral solution (generic)	190mg/5mls	27.5mg/5mls	10mls tds
Sodium feredetate oral solution (Sytron®)	207.5mg/5mls	27.5mg/5mls	10mls tds
Ferrous Fumarate syrup (Fersamal®)	140mg/5ml	45mg/5ml	10ml od

- Women should be counselled how to take oral iron supplements correctly.
- This should be on an empty stomach, 1 hour before meals, with a source of vitamin C such as orange juice to maximise absorption.
- Other medications, multivitamins and antacids should not be taken at the same time.
- **If taken correctly, oral iron supplements will give a rise in Hb of 20g/l every 3 weeks.**
- For women who suffer with nausea and epigastric discomfort, preparations with a lower iron content should be tried. Slow release and enteric coated forms should be avoided.
- Prescribe a liquid preparation if tablets cannot be tolerated.

4.3 Follow Up

Treatment for iron deficiency anaemia should be started promptly by the healthcare professional caring for the woman. Escalation to specialist medical care is required if iron deficiency anaemia is severe (Hb <70 g/l) and/or associated with significant symptoms or advanced gestation (>34 weeks) ([BSH Guideline 2019](#))

- Repeat Hb is required 2 weeks after commencing treatment for established iron deficiency anaemia, to assess response to treatment and ensure compliance and correct administration.
- Once the Hb is in the normal range, replacement should continue for three months and at least 6 weeks postpartum to replenish iron stores.
- If response to oral iron replacement is poor, concomitant causes which may be contributing to the iron deficiency anaemia, such as folate deficiency or anaemia of chronic disease need to be excluded. Consultant referral is required.

Postnatal women with a Hb <100g/l should be offered 40-80mg oral elemental iron daily for at least 3 months, and be offered a repeat FBC and ferritin to ensure Hb normalises and iron stores are replete.

4.4 Parenteral Iron Therapy

- Parenteral iron should be considered from the second trimester onwards and during the third trimester in women with confirmed iron deficiency who fail to respond or are intolerant of oral iron.
- Also consider in women presenting after 34 weeks gestation with Hb < 100g/l and confirmed iron deficiency.
- The dose of parenteral iron should be calculated on pre-pregnancy weight, aiming for a target Hb of 100g/l (BSH 2019).
- Please refer to local IV iron replacement guidance.
- Blood transfusion should be avoided in women with Hb >70g/l, consider parenteral iron.

4.5 Care in Labour

- Women with a Hb <100g/l are regarded as high risk and should be advised to deliver on the obstetric led unit.
- On admission in labour, IV access should be obtained and bloods taken for FBC and Group and Save (G&S).
- Active management of the third stage of labour is advised.
- Use cell saver if having a caesarean section

5. References

Pavird S et al. UK guidelines on the management of iron deficiency in pregnancy. British journal of Haematology March 2020. Volume 188, issue 6 pages 819-830.

Appendix 1 Iron Deficiency Anaemia in Pregnancy Flow Chart

IRON DEFICIENCY ANAEMIA IN PREGNANCY FLOW CHART (Check Hb at booking and at 28 weeks)



