Management of Iron Deficiency Anaemia in Obstetrics including Iron Infusion (Ferric Derisomaltose Pharmacosmos 100mg/ml)

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Management of Iron Deficiency Anaemia (IDA) in Pregnancy (summary)

Antenatal

- Definition: Hb<110 g/l at booking or <105g/l at 28 weeks or ferritin < 30
- Consider doing Ferritin at booking to be able to pick up iron deficiency early and treat it.
- Consider starting oral iron supplementation promptly, if there is evidence of iron deficiency.
- Recheck HB in 2 to 4 weeks to check response to the oral iron therapy.
- If Hb is normal treatment should be continued for further 3 months.
- Check compliance and tolerance if no improvement in Hb levels and consider IV iron.
- Check B12, folate and Hb electrophoresis if ferritin is normal to diagnose the cause of anaemia and to treat appropriately.
- Check FBC at 28 weeks along with other routine 28 weeks bloods.
- Recheck HB at 34 weeks for women who have been diagnosed with iron deficiency anaemia or if caesarean section is planned : Offer IV iron if Hb <100 g/l, or if there is no improvement in HB after oral supplementation.
- Escalation to specialist medical care if Hb <70 g/l, significant symptoms, falling HB after treatment.

Intrapartum

- If Hb < 85 g/l: Recommended to plan birth on labour ward.
- If Hb is between 85 g/l to 105 g/l: may be suitable for midwifery led area, requires individual assessment and care planning
- Hb> 105 g/l: suitable for Midwifery led care where no other complexity exists

Postnatal

- Check Hb in 48 hours for women with iron deficiency anaemia or women with measured blood loss of > 500 mls.
- Offer oral iron if Hb < 100 g/l
- Consider IV iron if symptomatic and needed urgent treatment or if previously unable to tolerate oral iron.
- Reserve blood transfusion for women at risk of further bleeding or with evidence of cardiac compromise.

Oral Iron

- Advice women to take oral iron in empty stomach and with orange juice and to avoid food for 45-60 minutes after. This increases the absorption.
- Recommended dose is 40 to 80 mg of elemental iron, once a day.
- Liquid oral iron can be offered as an alternative.

IV iron

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1. Introduction

Anaemia is defined as a low haemoglobin concentration (Hb); the lower limit of current reference ranges is two standard deviations below the mean in a healthy population [World Health Organization (WHO 2011). In pregnancy, there is a physiological expansion of plasma volume beginning in the first trimester and plateauing by the third trimester (Costantine 2014), which exceeds the increased production of red blood cells and haemoglobin. The resulting haemodilution contributes to the fall in Hb during pregnancy. Several factors may restrict or curtail this expansion, including pre-eclampsia and some medical comorbidities (Fisher & Nemeth, 1567S).

Anaemia in pregnancy can be caused by numerous other factors, including vitamin B12 and folate deficiency, the presence of a variant haemoglobin or thalassaemia, inflammatory disorders, haemolysis and blood loss, and, most commonly, by deficiency of iron. Iron deficiency is a progressive process, in which iron stores fall, from being replete to deplete and finally absent, consequently resulting in iron deficiency anaemia. Progressive iron deficiency can be measured by a variety of biomarkers. In iron depletion, the body's stored iron is reduced and individuals are at greater risk of anaemia in situations of increased demand. Iron utilisation is increased during pregnancy, as iron is required for fetal growth and development (Scholl, 2005), as well as for increased maternal erythropoiesis (Fisher & Nemeth, 1567S).

Early detection and appropriate management of iron deficiency anaemia (IDA) may prevent otherwise young and healthy patients from receiving an unnecessary blood transfusion and thereby avoiding associated risks. Treatment of iron deficiency should be oral iron +/- parenteral iron, together with patient education on the risks and benefits of treating iron deficiency anaemia in pregnancy to best ensure compliance. However, Iron supplementation should not be offered routinely to all pregnant women.

Maternal anaemia has been associated with a significantly higher risk of perinatal and neonatal mortality, low birth weight and pre-term birth, in a systematic review and meta-analysis of studies from low- and middle-income countries (Rahman *et al*, 2016).

Definition of iron deficiency anaemia (IDA) in pregnancy

Stage of pregnancy	Anaemia based on haemoglobin	Iron deficiency based on ferritin
First trimester	<110g/L	<30µg/L
Second trimester	<105g/L	
Third trimester	<105g/L	
Postpartum <48hrs 6 weeks onwards	 <100g/L <120g/L	 Likely to >30µg/L* <30µg/L

*Ferritin likely to be raise post-delivery due to inflammation Iron deficiency may still be present if ferritin <300µg/L when TSAT <20% or reticulocyte haemoglobin content <28pg (Munoz et al, 2018)
(British Committee for Standards in Haematology 2019).

2. Diagnosis of iron deficiency

Clinical signs and symptoms: These are usually non-specific in pregnancy, unless anaemia is severe. Fatigue is the most common symptom. Other complaints include pallor, weakness, headache, palpitations, dizziness, dyspnoea and irritability. Iron deficiency anaemia may also impair temperature regulation and cause pregnant women to feel colder than normal. Rarely, pica may develop (craving for non-food items). (Lumish et al 2014).

3. Laboratory testing

Current good practice guidelines advise testing at the booking appointment and at 28 weeks (RCOG 2015 and NICE 2016).

3.1 Full blood count and red cell indices

A low Hb, MCV (Mean Cell Volume), MCH (Mean Cell Haemoglobin) and MCHC (Mean Cell Haemoglobin Concentration) are suggestive of iron deficiency but need to be interpreted with caution in view of the physiological increase of MCV in pregnancy. However, microcytic, hypochromic indices may also occur in haemoglobinopathies, even when not pregnant and fully iron replete. Women who are haemoglobinopathy carriers should have serum ferritin testing prior to iron administration to confirm concomitant iron deficiency and exclude iron overload. If haemoglobinopathy status is not yet known, a trial of iron can be started at the same time as haemoglobinopathy testing.

3.2 Serum Ferritin

It is the first laboratory test to become abnormal as iron stores decrease and it is not affected by recent iron ingestion. It is generally considered the best test to assess iron-deficiency in pregnancy. Treatment should be considered when serum ferritin levels fall below 30 µg/l (Daru et al, 2017) as this indicates early iron depletion which will worsen unless treated.
N.B. Serum ferritin accurately reflects iron stores in the absence of inflammatory change. Ferritin is an acute phase reactant and should rise physiologically in 2nd and 3rd trimester and a normal ferritin level does not exclude iron deficiency.

3.3 Check Ferritin level for women at booking at risk of IDA

The following groups would be considered at high risk for developing IDA thus consider checking ferritin in addition to haemoglobin at booking.

- Known anaemic women where estimation of iron stores is needed (Hb <110g/l)
- Previous anaemia
- Multiparty P3 and above
- Consecutive pregnancy <1year following delivery
- Vegetarians/ vegans
- Teenage pregnancies
- Recent history of bleeding

Women where estimation of iron stores is necessary due to:

- Known haemoglobinopathy (as confirmation of low ferritin necessary prior to iron supplementation)
- High risk of bleeding (Placenta Praevia, Placenta Accreta)
- Jehovah's witness or those who decline blood products
- Blood compatibility challenging

Recommendations

- Ensure FBC and Ferritin done at booking appointment in the above group of women and results are checked with in 7-10 days and oral iron therapy is started, if Haemoglobin <110/l and/or Ferritin <30 µg.

- Clearly document in clinical notes the baseline ferritin level, Hb and start date and dose of oral iron commenced.

- Recheck Haemoglobin level at 16 weeks (or at least 2-4weeks after initiating treatment) in women who are on oral iron therapy. If there is no improvement in haemoglobin levels, consider compliance issue and offer alternative regimen. If there is no compliance issue check red cell folate & Vitamin B12 level and refer patient to secondary care.

- Recheck Haemoglobin level at 28 weeks gestation and commence oral iron therapy for women with Hb <105 gm/l. If anaemia is diagnosed prior to 28 weeks and anaemia is worsening check compliance and consider alternate regimen to improve compliance.

- Repeat Hb and ferritin at 34 weeks in women diagnosed with Iron deficiency anaemia and on oral iron. Consider IV iron therapy over oral iron in women with Hb <90 g/l and no increment in haemoglobin with oral iron therapy if > 34 weeks' of gestation.

- If iron deficiency anaemia diagnosed at > 34 weeks with Hb < 90 g/l, consider IV iron therapy.

4. Management of labour in women with iron deficiency anaemia

The intended place of birth for women with iron deficiency anaemia may be influenced by pre-labour Hb, as anaemic women may have both a higher likelihood of PPH and lower iron stores for coping with haemorrhage. Other risk factors should also be taken into consideration, including previous PPH, grand-multiparity, fibroid uterus, multiple pregnancy, severity of anaemia and whether blood components will be accepted or not.

Women with Hb < 105 g/l approaching labour should have an individualised plan discussed and documented clearly in the birth plan or maternity notes. Where Hb is between 105-85 g/l, individual assessment (NICE, 2017) around the most suitable birth environment will include the completion of stage 0 ObsCymru assessment (WMNN 2021). In isolation Hb between 85-105 g/l does not automatically mean that a women should be recommended to plan to birth on an obstetric unit (NICE, 2017).

The discussion with the woman should include information around intravenous access, the benefits of stored group and save and the availability of obstetric, transfusion and surgical services on the Obstetric Unit and the management of postpartum haemorrhage in all settings. In all instances an active third stage is recommended.

Postpartum Anaemia
Women with PPH >500 ml, those with uncorrected anaemia in antenatal period or who are symptomatic of anaemia postnatally - should have their Hb checked within 48 hrs of delivery. Women with Hb < 100 g/l within 48 h of delivery, who are haemodynamically stable, asymptomatic/mildly symptomatic should be offered oral elemental iron 40–80 mg daily for at least 3 months.

Use of IV iron postpartum should be considered in women who have Hb below 80g/dl or previously intolerant of or did not respond to oral iron and/or where the severity of symptoms of anaemia warrants prompt management.

Blood transfusion should be reserved for those with risk of further bleeding, imminent cardiac compromise or symptoms requiring immediate attention.

5. Management of iron deficiency anaemia (see APPENDIX 1)

Dietary advice:
Haem iron from meat, fish and poultry is absorbed 2- to 3-times more readily than non-haem iron. Meat also promotes absorption of iron from other less bioavailable non-haem iron sources However, approximately 95% of dietary iron intake is from non-haem iron sources. Vitamin C (ascorbic acid) significantly enhances iron absorption from non-haem foods. Tannins in tea and coffee inhibit iron absorption when consumed with a meal or shortly after. Flat breads containing chapati flour also inhibit the absorption of iron. Once women become iron-deficient in pregnancy it is not possible to ensure repletion through diet alone and a trial of therapeutic iron replacement should be considered.

Oral Iron Therapy:
Women should be counselled as to how to take oral iron supplements correctly. This should be on an empty stomach with a source of vitamin C (ascorbic acid) such as orange juice to maximise absorption. However, women who do not tolerate on empty stomach should be advised to try with a meal. Other medications or antacids should not be taken at the same time.

Recent studies showed that fractional absorption of iron in iron-depleted woman is maximised by taking ***elemental iron*** doses of 40 – 80mg once per day or alternate days. (Pavord et al 2020). This decreases the gastrointestinal side effects and can increase compliance. At this dosage, the Hb needs to be checked at 2–4 weeks to ensure an adequate response to assess compliance, correct administration and response to treatment. The Hb concentrations should rise by 20g/L over 3-4 weeks. Once Hb is in the normal range, treatment should be continued for a further 3 months and at least until 6 weeks postpartum with a repeat FBC and ferritin at the end of therapy to replenish iron stores.

Iron salt	Dose per tablet	Elemental Iron per tablet
Ferrous Fumarate	210 mg	65mg
Ferrous Gluconate	200mg	35mg
Ferrous Sulphate	200mg	65mg
Ferrous Feredetate (Sytron)	190mg / 5ml elixir	27.5mg/5ml

Note: Consider reducing to alternate day regimen from once daily regimen if patient has side effects to improve compliance. Liquid oral iron is another option if patient wants to avoid tablet form or has side effects.

If anaemia without an obvious other cause is detected, a diagnostic trial of oral iron should be given without delay, with a repeat full blood count in 2–3 weeks. If response to oral iron replacement is poor, concomitant causes that may be contributing to the anaemia considered, such as folate deficiency, anaemia of chronic disease, or malabsorption. Escalation to specialist medical care is required if anaemia is severe (Hb < 70 g/l) and/or associated with significant symptoms or advanced gestation (> 34 weeks) or if the Hb is failing to respond after 2–3 weeks of oral iron correctly taken.

Intravenous iron infusion: should be considered from the 2nd trimester onwards and postpartum period.

1. Persistent iron deficiency anaemia < 90 g/L due to oral iron intolerance/ non-compliance/ treatment failure/ proven malabsorption or active inflammatory bowel disease, the woman is approaching term (Hb < 100 g/l after 34 weeks) and there is insufficient time for oral supplementation to be effective. (N.B. Non-compliance should be challenged with appropriate counselling)

2. Symptomatic postpartum anaemia < 80g/L and haemodynamically stable or < 100g/L if unable to tolerate orally.
3. **Haemodynamically unstable patients should be transfused with blood to a stable state (approx 80g/L) and then offered intravenous iron in addition. This is achieved by a single unit transfusion followed by intravenous iron to treat severe iron deficiency in selected cases.**

Contraindications

Intravenous iron preparations should not be used in the following circumstances:

- First trimester of pregnancy.
- Non iron deficiency anaemia (e.g., Low vitamin B12, low folic acid, haemolytic anaemia) and patients with haemoglobinopathies, e.g., sickle cell and thalassaemia without evidence of concomitant iron deficiency.
- Iron overload or disturbances in the utilisation of iron, e.g., haemochromatosis
- Known serious hypersensitivity to any parenteral iron product or hypersensitivity to specific product to be used.
- Acute or chronic bacteraemia.

In addition, of Ferric derisomaltose Pharmacosmos 100mg/ml is contraindicated in patients with:

- Decompensated liver disease.

Special warnings

Hypersensitivity reactions, including serious and potentially fatal anaphylactic / anaphylactic reaction, have been associated with administration of intravenous iron. For this reason, IV iron should only be administered when:

- Staff trained to evaluate and manage anaphylactic reactions are immediately available
- Anaphylaxis box should be kept in close vicinity.

Midwives administering IV iron should attend the training provided by Pharmacosmos (the manufacturer of Ferric derisomaltose Pharmacosmos 100mg/ml) and care taken to ensure competence with cannula insertion due to the potential of long-lasting brown staining associated with para-venous leakage of IV iron.

Hypersensitivity and infusion-related reactions are uncommon with modern IV iron preparations and the rates of serious adverse reactions are low (1/10,000 cases). It is important to distinguish self-limiting infusion type Fishbane reactions from serious reactions as these may mimic the early symptoms of an anaphylactoid/anaphylactic reaction but disappear shortly after the iron administration is stopped and typically do not reoccur if the administration is restarted at a lower infusion rate.

- In all cases of reaction, the infusion must be stopped, and the patient evaluated. A reaction management algorithm available (APPENDIX 2) to support identification of self-limiting vs. serious reactions where the anaphylaxis policy should be followed.
- Hypotensive episodes may occur if IV iron administered too rapidly, therefore decrease infusion rate as indicated.
- Fetal bradycardia may occur following administration of IV iron. It is usually transient and a consequence of a hypersensitivity reaction in the mother. The unborn baby should be carefully monitored during administration of IV iron products.

Carefully consider the risk benefit of giving IV iron in the following patient groups:

- Patients with enhanced risk of reaction such as patients with drug allergies, history of severe asthma, eczema or other atopic allergy or patients with immune or inflammatory conditions (e.g. systemic lupus erythromatosus, rheumatoid arthritis)
- Patients with acute or chronic infection – consider delaying treatment until infection addressed.
- Patients with compensated liver dysfunction and IV iron should be avoided if ALT/AST >3xULN.

Delayed reactions (e.g., arthralgia, myalgia and sometimes fever) may also occur, from several hours up to 4 days, advise patient of this possibility. Symptoms usually last 2-4 days and settle spontaneously or following the use of simple analgesics such as paracetamol.

Procedure

- Patient must be seen by an obstetrician; should be informed of potential side effects, including the potential for long lasting brown staining in the case of extravasation, and written information should be provided.
- Decision for iron infusion made.

- Documentation in notes from obstetrician about discussion regarding need for iron infusion and consent given by woman.
- Infusion prescribed by obstetrician (Ferric derisomaltose Pharmacosmos 100mg/ml for over 18 year old women and Ferinject for under 18's or for women who are unable to have Ferric derisomaltose Pharmacosmos 100mg/ml see below for prescribing guidance).
- **Oral iron consumption within 24 hours is not a contra-indication for IV iron.**

Day of infusion

- Cannulate
- Make up infusion.
- Complete checklist
- Record baseline observations.
- Closely observe mother for signs of reaction and cannula site for signs of extravasation for initial 3-5mins of infusion. Remain available to observe throughout.
- Monitor mother and unborn baby particularly in the event of reaction.
- Fetal monitoring by doppler, CTG indicated in event of a reaction or hypersensitivity reaction.
- Stay for 30 mins or 1 hour post infusion depending on which infusion given.
- Pulse and Blood pressure should be checked.
- Flush the cannula before removing to reduce risk of staining.

Patient Monitoring

Ferric derisomaltose Pharmacosmos 100mg/ml - Pulse, respirations, oxygen saturations, temperature, blood pressure and fetal auscultation should be checked prior to infusion, pulse and blood pressure every 15 minutes throughout infusion and 30 minutes at the end of the infusion.

Women who have had Ferric derisomaltose should stay for at least 30 minutes after the infusion has been completed (Keep cannulated particularly if day patient until last set of observations completed).

Ferinject®- Pulse, respirations, oxygen saturations, temperature, blood pressure and fetal auscultation should be checked prior to infusion, at the end of infusion, 30 minutes and 60 minutes after the infusion.

Women who have had Ferinject should stay for at least 1 hour after the infusion has been completed (Keep cannulated particularly if day patient, until last set of observations completed).

Follow Up

FBC, reticulocyte count and ferritin should be checked at least 4 weeks post infusion. Oral iron should not be started earlier than 5 days after last iron infusion doses and administration of parenteral iron.

Doses and administration of parenteral iron

Both Ferric derisomaltose and Ferinject dosing follow a stepwise approach:

1. Determination of the individual iron need based on the tables provided (Use booking weight antenatally and actual weight postnatally)

2. Calculation and administration of the iron dose(s) based on product dosing requirements.
3. Post-iron repletion assessments at least 4 weeks after administration of final infusion. These steps can be repeated if further iron required.

Ferric derisomaltose Pharmacosmos 100mg/ml (Over 18's)

[1] Determine how much iron is needed based on table below: -

Hb (g/L)	Patient body weight		
	<50kg	**50kg – <70kg**	**≥70kg**
≥100	500mg	1000mg	1500mg
<100	500mg	1500mg	2000mg

Use booking or pre-pregnancy weight to calculate amount of iron needed antenatally, actual weight when using postnatally.

[2] Calculate and administer dose(s)
Calculate dose(s) based on single infusions must not exceed 20mg/kg.

- If the iron need based on the table is ≤20mg/kg administer full dose as single infusion
- If the iron need based on the table is >20mg/kg administer 20mg/kg infusion. The remainder can be given 1 week later or dependant on clinical judgement can await follow-up laboratory tests.
  (See Appendix 3 for iron need and iron dose tables)

Administer dose(s) based on table below

Iron dose	Diluent	Administration
≤500mg	Undiluted or diluted in max 20ml (0.9% sodium chloride)	Slow push injection over 5mins
≤1000mg	100ml 0.9% sodium chloride	infusion over >15 mins
>1000mg	250ml (0.9% sodium chloride	Infusion over ≥30 mins

- Ferric derisomaltose Pharmacosmos 100mg/ml should be added aseptically to specified volume of 0.9% sodium chloride for infusion. Once made up, the infusion should be used immediately but is stable for 48 hours at room temperature (25°C) in dilutions up to 1:250.
  - Ferric derisomaltose Pharmacosmos 100mg/ml should not be diluted to concentrations less than 1mg iron / ml including the volume of solution, Ferric derisomaltose and never in more than 500ml

- A 50ml 0.9ml sodium chloride flush can be given over 30 minutes to clear the IV line of remaining of Ferric derisomaltose

Ferinject® (Under 18)
The dose of parenteral iron should be calculated based on pre-pregnancy weight, aiming for a target Hb of 110 g/l.

Dose

Haemoglobin	Patient body Weight		
(g/l)	Under 35kg	35-70kg	70kg and over
Less than 100	500mg	1500mg	2000mg
100-140	500mg	1000mg	1500mg

- The maximum dose per single infusion is 20 mg iron/kg body weight or 1000 mg of iron.
- If further infusions are required to complete the dose these should be at least a week apart.
- Risk of anaphylactoid reaction >1/10 000 to <1/1000.

Administration

- Ferinject is not stock and will need to be ordered from pharmacy.
- Dilute 500mg in 100mL sodium chloride 0.9% and infuse over a minimum of 6 minutes.
- Dilute 1000mg in 250mL sodium chloride 0.9% and infuse over a minimum of 15 minutes.
- Ferinject should not be diluted to concentrations less than 2 mg iron/mL.
- The infusion should be used immediately after preparation.
- The dose of Ferinject® is expressed in mg of elemental iron. One ml of solution contains 50 mg of iron as Ferric Carboxymaltose.
- A 50ml 0.9ml sodium chloride flush can be given over 30 minutes to clear the IV line of remaining Ferinject.

Hypersensitivity

Genuine hypersensitivity is rare and no difference between the risk for hypersensitivity reactions has been identified among IV iron products available in the UK. In rare cases, fetal bradycardia has been observed in pregnant women with hypersensitivity reactions to parenteral iron (Pavord et al, 2020).

If a woman does experience a hypersensitivity, follow reaction management algorithm (**Appendix 2**), once maternal symptoms have been rectified commence CTG monitoring to assess fetal wellbeing if over 26 weeks.

A plan will then need to be made by the on-call obstetrician for treating the anaemia if continuing the IV iron is abandoned.

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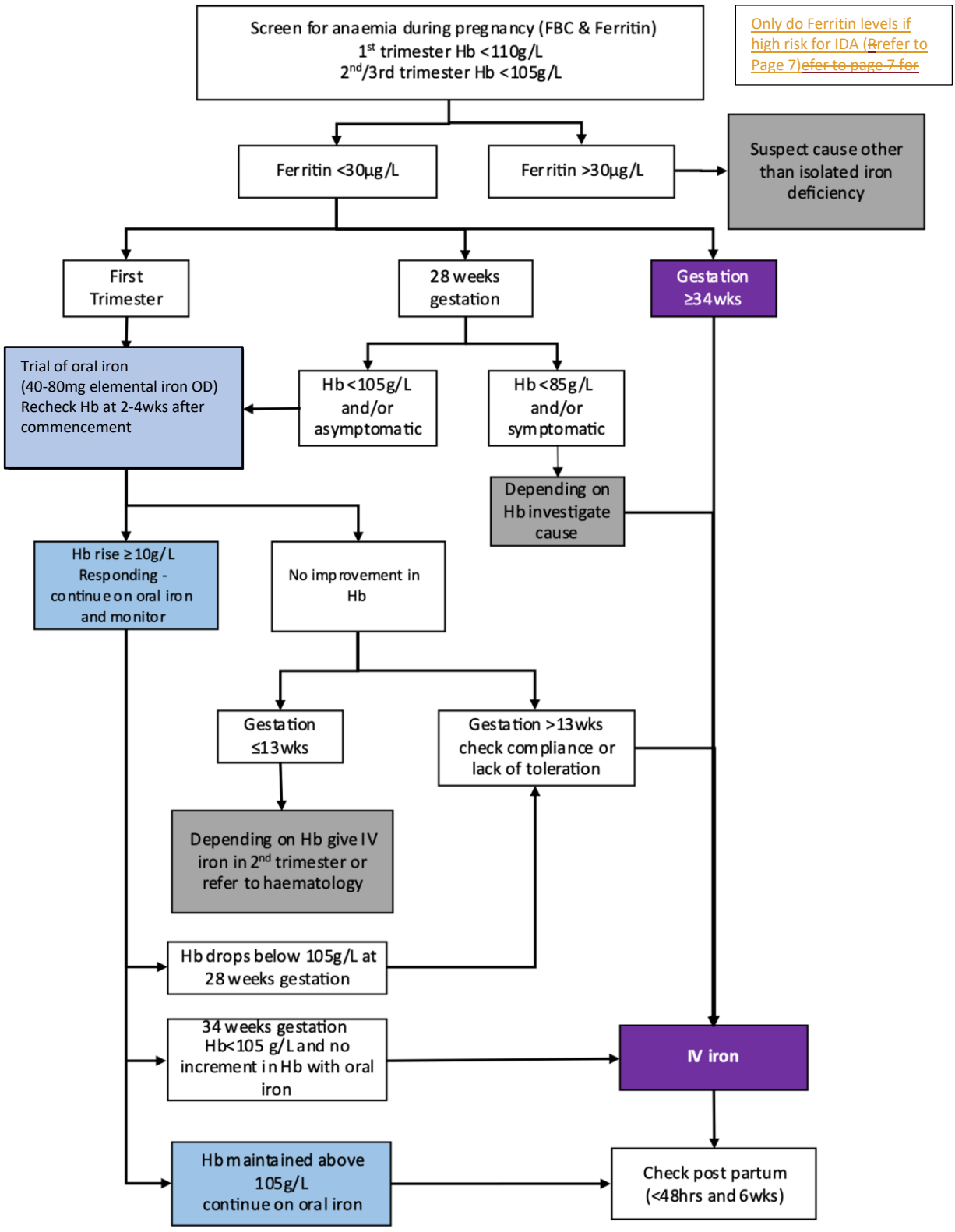
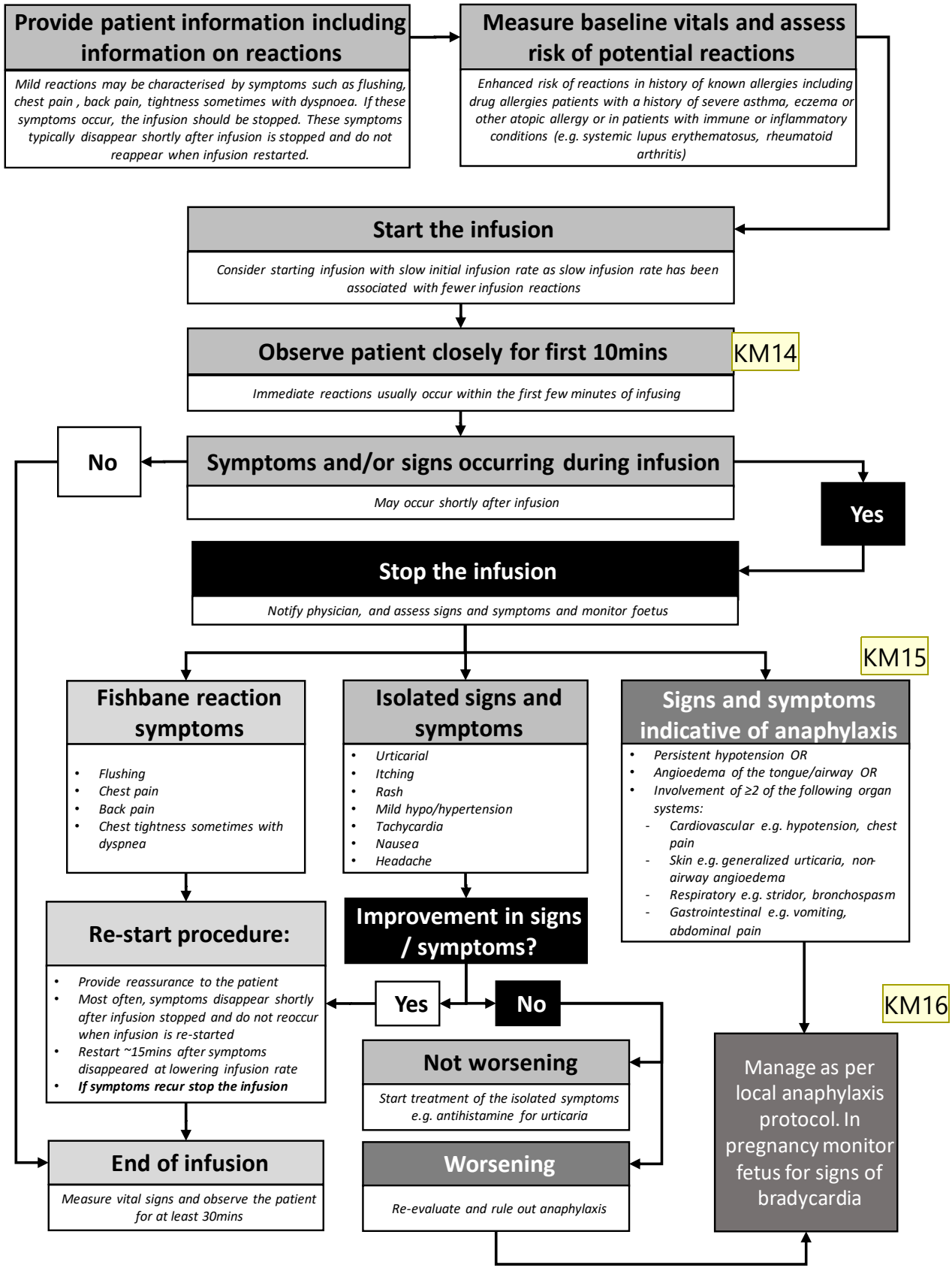
Appendix 1 – Obstetrics Patient Pathway

Appendix 1. Obstetrics Patient Pathway[1,2]



1. Achebe & GafterGvili. Blood 2017;129(8):940949
2. Pavord S et al. Br J Haematol. 2020;188(6):819830.

Appendix 2: Safety management Algorithm[1-2]



Adapted from 1. Achebe M & DeLoughery TG Transfusion 2020;60(6):1154-1159; 2. Rampton D Haematologica 2014;99:1671-1676

Appendix 3: IV Iron dosing table Ferric derisomaltose Pharmacosmos 100mg/ml (Over 18 years)

Simplified dosing table[1]

Hb (g/L)	Patient body weight		
	<50kg	**50kg – <70kg**	**≥70kg**
≥100	500mg	1000mg	1500mg
<100	500mg	1500mg	2000mg

The iron need required may be administered in a single of Ferric derisomaltose infusion up to 20 mg iron/kg body weight or as weekly infusions until the cumulative iron need has been administered. If the iron need exceeds 20 mg iron/kg body weight, the dose must be split in two administrations with an interval of at least one week. It is recommended whenever possible to give 20 mg iron/kg body weight in the first administration. Dependent on clinical judgement the second administration could await follow-up laboratory tests1.

Administration

Iron dose	Diluent	Administration
<1000mg	100ml 0.9% sodium chloride	infusion over >15 mins
≥1000mg	250ml (0.9% sodium chloride	Infusion over ≥30 mins

Appendix 4 - Ferric derisomaltose Pharmacosmos 100mg/ml solution for injection/infusion - Summary of Product Characteristics (SmPC) - (emc) (medicines.org.uk)

Ferric derisomaltose Pharmacosmos **Administration**

Addressograph	**Date:** **Hb:** **Ferritin:** **Decision for IV iron made by (Registrar or Cons):**

Date**:**_____ Weight (Kg):_____ Allergies:_____

Pregnant patients: **Booking** weight (Kg):_____ EDD:_____

Fetal movements normal: Yes/No Auscultation:_____

Initial observations

Time_____ BP_____/_____ Pulse_____ Temperature _____°C

Respiration rate_____ Oxygen Saturation_____%

Time infusion started _____ Dosage_____

Monofer batch number(s):_____

Peripheral intravenous cannula care bundle completed □

Inform medical team that infusion commencing □

Observe for signs of reaction and check cannula for signs of perivenous leakage during initial 3-5mins. Follow reaction management algorithm in case of reaction

Observations after infusion

Time: _____ BP: _____/_____mmhg Pulse: _____

Observations 30 minutes after dose

Time: _____ BP: _____/_____mmhg Pulse: _____

Follow up plan:

_____

_____

_____

_____

Appendix 5 - Ferinject Administration

Addressograph	**Date:** **Hb:** **Ferritin:** **Decision for IV iron made by (Registrar or Cons):**

Date**:**_____ Weight (Kg):_____ Allergies:_____

Pregnant patients: **Booking** weight (Kg):_____ EDD:_____

Fetal movements normal: Yes/No Auscultation:_____

Date of last dose of oral iron:_____(Should have stopped 24 hours prior to infusion)

Initial observations

Time_____ BP_____/_____ Pulse_____ Temperature _____°C

Respiration rate_____ Oxygen Saturation_____%

Time infusion started _____ Dosage_____

Ferinject batch number(s):_____

Peripheral intravenous cannula care bundle completed □

Inform medical team that infusion commencing □

Observations after infusion ends

Time: _____ BP: _____/_____mmhg Pulse: _____

Observations 30 minutes after dose

Time: _____ BP: _____/_____mmhg Pulse: _____

Observations 60 minutes after dose

Time: _____ BP: _____/_____mmhg Pulse: _____

Follow up plan:

_____

_____

_____

_____

Appendix 6 – Pre iron infusion prescription checklist

Addressograph

Hb:_____

Ferritin: _____ (Need to have a ferritin before iron can be administered).

Has woman been taking oral iron therapy for the last two weeks?

Yes: If Hb not responded to oral iron therapy consider IV iron.

No: Ensure woman is compliant with oral iron therapy for two weeks and recheck Hb after if responding (10g/L in two weeks) no need for IV iron infusion. If woman close to EDD or Hb very low clinical judgement can used to individualise woman's care.

Woman over 18 years?

Yes – Monofer can be prescribed

No – Ferinject can be prescribed

Allergic to iron preparations?

Yes: Not suitable for IV iron.

No: Can have IV iron.

If yes to answers to answers below more susceptible to hypersensitivity:

Liver disease Y/N

Asthma Y/N

Eczema Y/N

SLE Y/N

Rheumatoid disease Y/N

Arrange Iron infusion with Singleton ADAU. ADAU only infuse iron to antenatal outpatient women, if iron infusion needed for inpatients this is to be facilitated in the ward areas.

Obstetrician name:_____ Date:_____

Maternity Services
Checklist for Clinical Guidelines being Submitted for Approval by Maternity

Quality & Safety Group

Title of Guideline:	Management of Iron Deficiency Anaemia including iron infusion (Monofer® for over 18 and Ferinject® for under 18).
Name(s) of Author:	Mrs Madhuchanda Dey Dr Neha Uddin
Chair of Group or Committee supporting submission:	Antenatal Forum
Issue / Version No:	3
Next Review / Guideline Expiry:	September 2024
Details of persons included in consultation process:	Antenatal Forum
Brief outline giving reasons for document being submitted for ratification	Renew existing policy which required updating in line with current practice
Name of Pharmacist (mandatory if drugs involved):	Ann Wilson
Please list any policies/guidelines this document will supercede:	Iron Infusion in Pregnancy (Jan 2017) INTRAVENOUS IRON INFUSION IN PREGNANCY (MONOFER®) 2018 Management of Anaemia in Pregnancy 2018
Date approved by Antenatal Forum	September 2023
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