

# ROYAL HOSPITAL FOR WOMEN

LOCAL OPERATING PROCEDURE

## CLINICAL POLICIES, PROCEDURES & GUIDELINES

Approved by Quality & Patient Safety Committee  
21 November 2013

### ANAEMIA AND HAEMOGLOBINOPATHIES IN PREGNANCY

*This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.*

#### 1. OPTIMAL OUTCOMES

- Appropriate assessment and management of anaemia / haemoglobinopathies to prevent fetal and maternal morbidity and mortality
- To facilitate prompt and appropriate referral to genetics of couples who are “high risk” of haemoglobinopathies

#### 2. PATIENT

- Pregnant woman with Hb  $\leq$  110g/L prior to 20 weeks
- Pregnant woman with Hb  $\leq$  105g/L after 20 weeks
- Woman and their partners at risk of, or with known haemoglobinopathy

#### 3. STAFF

- Medical staff
- Registered midwives

#### 4. EQUIPMENT

- 21 gauge needle with vacutainer
- EDTA blood tube - Full Blood Count (FBC), B12, red cell folate, HbEPG (if required)
- Lithium heparin with gel separation blood tube (iron studies) (if required)

#### 5. CLINICAL PRACTICE

- Review woman and partner’s history and prior investigations at first pregnancy contact (by GP) for risk for anaemia / haemoglobinopathies
- Perform Full Blood Count (FBC) at booking visit and at 28 weeks
- Discuss appropriate diet to maintain iron stores and inform woman of symptoms of anaemia
- Perform Haemoglobinopathy Screening (see Figure 1)
  - Screen if :
    - High risk ethnicity : SE Asian, Asian, Indian, Mediterranean, Arabic, Black African
    - Low MCV (<86fL)
  - Request FBC + Film, HbEPG and Iron studies for woman. Include gestation and ethnicity on request form
  - Screen partner (FBC + Film, HbEPG, Iron studies).
  - State woman’s name and MRN on partner’s form and state partner’s name and Date of Birth on woman’s form
- Investigate anaemia as per Figure 1 :
  - Review history and past investigations
  - Review blood film (microcytosis, fragmentation, sickle cells) and MCV, MCH
  - Iron studies / vitamin B12 / folic acid / red cell folate / HbEPG
- Refer haemoglobinopathy carriers to an Obstetrician / Haematologist for maternal management
- Refer to Geneticist if both parents known or suspected haemoglobinopathy carriers. DNA testing, then CVS / Amniocentesis may be offered



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- Treat iron deficiency (Ferritin <30, regardless of Hb)
  - Dietary measures AND
  - Oral iron supplementation
    - At least 80mg daily, up to 100mg tds, as tolerated
    - Give woman information handout (Appendix 1)
    - Refer to table below and patient handout for iron preparations
    - When discussing iron supplementation in pregnancy, awareness of the variation in elemental iron contents in supplemental formulations, is important
  - Do not commence iron replacement without confirming iron deficiency on iron studies because low MCV or Hb may actually be due to haemoglobinopathy
  - Discuss side effects of iron supplementation
  - Monitor response: Hb should increase within 2 weeks. If not, evaluate further
  - Infusion of iron may be indicated in women who are resistant / intolerant to oral iron replacement
- Treat specific causes of anaemia
- Refer to Obstetrician or Haematologist if unexplained anaemia, moderate to severe anaemia (Hb < 90g/L), significant symptoms, late gestation >34 weeks or failure to respond to a trial of oral iron

#### 6. DOCUMENTATION

- Antenatal Hospital Record and Yellow Card
- Integrated Clinical Notes

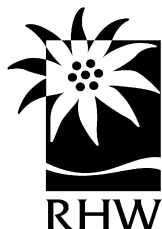
#### 7. EDUCATIONAL NOTES

Iron tablets commonly available include:

NAME	ELEMENTAL IRON CONTENT	ADDITIONAL CONTENT
Fero-Gradumet	105mg	
Fero-Grad C	105mg	Vitamin C
Fero-f tab	100mg	Folic acid 350mcg
Fefol	87.4mg	Folic acid 300mcg
FGF	80mg	Folic acid 300mcg
Elevit	60mg	Folic acid 800mcg + others
Fabfol plus	12mg	Folic acid 500mcg
Fero liquid	30mg/5ml	
Blackmores for Women Bioiron	5mg	

#### 8. RELATED POLICIES / PROCEDURES / CLINICAL PRACTICE LOP

- Antenatal Shared Care Protocol
- Ironcarboxymaltose by Infusion (Ferinject)
- Prevention and Treatment of Postpartum Haemorrhage



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#### 9. REFERENCES

- 1 Antenatal screening tests. RANZCOG college statement 2006
- 2 Brabin BJ, Hakimi M, Pelletier D. Iron-deficiency anemia: Reexamining the nature and magnitude of the public health problem. An analysis of anemia and pregnancy-related maternal mortality. *The Journal of Nutrition* 2001; 131: 6048-6158
- 3 Lone FW, Qureshi RN and Emanuel F. Maternal anaemia and its impact on perinatal outcome. *Tropical Medicine and International Health* 2004; 9: 486-490
- 4 NICE. Antenatal care: routine care for the healthy pregnant woman. National collaborating centre for Women's and Children's Health. Clinical guideline 2008
- 5 Reveiz L, Gyte GML, Cuervo LG. Treatments for iron-deficiency anaemia in pregnancy (review). *Cochrane Database of Systematic Reviews* 2008
- 6 Sheiner E, Levy A Yerushalmi R and Katz M. Beta-thalassemia minor during pregnancy. *Obstetrics and Gynaecology* 2004; 103: 1273-1277
- 7 Government of South Australia, South Australian Perinatal Practice Guidelines, Chapter 60 Anaemia in Pregnancy 2012
- 8 UK guidelines on the management of iron deficiency in pregnancy, British Committee for Standards in Haematology July 2011

#### REVISION & APPROVAL HISTORY

Endorsed Obstetrics LOPs 5/11/13

Reviewed and renamed November 2013 (previously named *Anaemia in Pregnancy Guideline*)

Approved Patient Care Committee 5/2/09

Endorsed Obstetric Clinical Guidelines Group December 2009

**FOR REVIEW:** NOVEMBER 2018

...../attachments

## PATIENT INFORMATION LEAFLET - IRON DEFICIENCY IN PREGNANCY

Your recent blood test shows that you have anaemia (low haemoglobin, below the recommended level of 110g/L) and / or low iron (ferritin) levels.

This is common in pregnancy. You should increase your iron levels both by increasing the iron in the food in your diet and by taking an iron supplement tablet. This should improve your energy levels and also ensure plentiful iron is available for the baby.

### A. Diet

Iron is best absorbed into the body from food that you eat.

Increase your daily intake of food with high iron content:

- **Red meat** : beef, lamb, veal, pork (the best source)
- **Chicken**
- **Fish**, especially oily fish : tuna, trout, salmon
- **Tofu, soybeans, lentils, beans, baked beans**
- **Cereals**, especially wholegrain. Check the label on bread and breakfast cereals, as some are iron-fortified, eg. Weet-Bix, All-Bran

Other foods also contain iron, but to a lesser extent: eggs, green leafy vegetables (especially spinach), dried fruit and some other fruit and vegetables.

### B. Iron Supplements

There are several iron supplements available over the counter at any pharmacy. Check for the *Elemental Iron content* – the higher the better. Start with one tablet and increase to two and then three tablets per day.

NAME	ELEMENTAL IRON CONTENT	ADDITIONAL CONTENT
Fero-Gradumet	105mg	
Fero-Grad C	105mg	Vitamin C
Fero-f tab	100mg	Folic acid 350mcg
Fefol	87.4mg	Folic acid 300mcg
FGF	80mg	Folic acid 300mcg
Elevit	60mg	Folic acid 800mcg + others
Fabfol plus	12mg	Folic acid 500mcg
Fero liquid	30mg/5ml	
Blackmores for Women Bioiron	5mg	

To help your body absorb the iron efficiently, take the tablet with orange juice between meals. Avoid consuming coffee, tea, dairy products (milk, yoghurt, cheese) and calcium supplements at the same time. Try to spread out the calcium and dairy throughout the rest of your day, as it is still very important for you and your baby. Some women who are taking iron supplements may notice that their stool is darker in colour – this is normal. Iron can cause varied gastrointestinal symptoms including nausea (most commonly), abdominal discomfort, constipation and diarrhoea and occasionally trying a different iron preparation may improve the symptoms. You should drink plenty of water (approximately 1.5 Litre per day) and eat foods high in fibre, such as brown grain bread and rice, fruit and vegetables.

You are recommended to continue your iron treatment for at least one month after your baby is born.

**Please discuss any concerns with your Midwife or Doctor at your next visit**

Patient information leaflet written by Giselle Kidson-Gerber and Joanne Arkwright.

Revised September 2013

**FIGURE 1 : INVESTIGATION OF ANAEMIA AND HAEMOGLOBINOPATHY IN PREGNANCY**

