Iron infusion procedure

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Purpose

The purpose of this document is to provide SCHHS staff with access to the Queensland Health Guidelines for the correct course of action for the safe prescribing, administration and monitoring of patients requiring iron infusions for the treatment of iron deficiency anaemia.

This document is underpinned by relevant guidelines and standards identified below.

Content

1. Iron deficiency anaemia management (excluding day admission patients)

a. **Preferred option** for administering parenteral Iron in **most clinical settings**

- Standard SLOW dose (4-6 hours) - Iron Polymaltose (Ferrosig®) intravenous infusion.

b. When rapid infusion is required due to time constraints and the dose is ≤ 1.5 grams

- Total RAPID dose **-** Iron Polymaltose (Ferrosig®) – intravenous infusion.

2. Day admission patients – Iron deficiency anaemia management

a. Day admission – excluding renal patients

- Intravenous infusion (15 minutes) or bolus injection Ferric Carboxymaltose (Ferinject®)

b. Renal day admission patients only

- Intravenous infusion - Iron Polymaltose (Ferrosig®).
- Renal patients may also be treated using Intravenous infusion (15 minutes) or bolus injection - Ferric Carboxymaltose (Ferinject®) for Day admission patients.

3. Preoperative optimisation

a. Preoperative haemoglobin assessment and optimisation guide

- May be prescribed preoperatively to minimise blood transfusions for surgical patients including those undergoing Total joint arthroplasty.
- Refer to Appendix 1 - Preoperative haemoglobin assessment and optimisation guide flowchart.

Procedure / process

1. Iron deficiency anaemia management (excluding day admission patients)

1a. Preferred option for administering parenteral Iron in most clinical settings:

Standard SLOW dose (4-6 hours) - **Iron Polymaltose (Ferrosig®) - Intravenous infusion**

Purpose

The Statewide Guideline Total dose slow intravenous iron polymaltose infusion for the management of iron deficiency anaemia provides recommendations regarding best practice for the safe prescribing, administration and monitoring of patients requiring a slow intravenous iron polymaltose infusion for the treatment of iron deficiency anaemia, when treatment with oral supplementation is either inappropriate or ineffective.

Scope / Site Specifics

For use in most clinical settings and in all cases when the required dose exceeds 1.5 grams

This guideline is not to be used for patients with significant renal impairment, patients with fluid-restrictions or patients who receive regular incremental doses of iron (such as patients on dialysis).

1b. When rapid infusion is required due to time constraints and the dose is ≤ 1.5 grams:

Total RAPID dose (Iron Polymaltose (Ferrosig®) - Intravenous infusion

Scope / Site Specifics

This rapid iron protocol can be used where time is a consideration. The medical officer is to determine the suitability of individual patients for rapid iron.

The rapid protocol is not to be used when the required dose exceeds 1.5 grams. (If greater than 1.5 grams is required - refer to the Total dose SLOW Statewide guideline above).

Indications for use

- Demonstrated intolerance, non-compliance, or lack of efficacy with oral iron despite modification of dose, timing and frequency.
- Intestinal malabsorption of oral medication.
- Ongoing iron (blood) losses that exceed absorptive capacity.
- A clinical need for a rapid iron supply.
- Pregnancy (beyond 1st trimester) and post-partum.

Contraindications

- Known anaphylaxis to iron polymaltose complex.
- Anaemia that is not due to iron deficiency.
- Iron overload.
- Patients with New York Heart Association Class III or IV heart failure.
- Patients with known left ventricular ejection fraction of 30% or less.
- Patients with an estimated glomerular filtration rate of 15mL/min or less.
- Patients otherwise deemed at risk of fluid overload.
- Bronchial asthma.
- Pregnancy in the first trimester.

Precautions

- Transfusion-dependent anaemia's — risk of iron overload.
- Liver dysfunction.

- Acute or chronic infection, eczema, atopic allergies.

Interactions

- Absorption of oral iron is reduced when administered concomitantly with intravenous iron
- Oral iron should not be used for at least one week after intravenous iron.

Presentation and storage

- A **2mL** ampoule of iron polymaltose (318mg) contains **100mg of elemental iron**.
- Store below 25°C.
- Do not refrigerate or freeze vial (diluted solutions of 2-5mg/mL are stable for 24 hours at 2-8°C).
- Protect from light.

Dosing procedure

- The medical officer is to order the iron polymaltose on the intravenous and subcutaneous fluid order form (order is to state the dose (1-1.5 gram of elemental iron), in sodium chloride 0.9% to final volume of 250mL, infused at 40mL/hour for 15 minutes then increased to 250mL/hour for remainder if tolerated).
- The cumulative dose of iron polymaltose must be calculated for each patient individually.
- The cumulative dose required for Hb restoration and repletion of iron stores is calculated by the following **Ganzoni formula**:

Cumulative iron dose (mg) = body weight (kg) x (target Hb (g/L)–actual Hb) x 0.24 + iron stores (mg)

  - For weight ≤34 kg, **target = Hb 130g/L and iron stores = 15 mg/kg**
  - For weight >34 kg, **target Hb = 150g/L and iron stores = 500 mg**
  - For weight >90 kg, use 90kg in the Ganzoni formula

  Example calculation for 60kg patient with Hb of 100g/L (aiming for a target of 150 g/L)

  [60 x (150-100) x 0.24] + 500mg = 1220mg (cumulative iron dose required)

  * Round dose to 1200mg (nearest whole iron polymaltose vial).

- All doses (1-1.5g) are diluted in **0.9% sodium chloride** to a final volume of **250mL**. **Do not mix with any other fluids or any other drugs.**
- Iron polymaltose is to be administered by a Registered Nurse.
- Iron polymaltose may only be administered to patients in locations where the emergency drugs for treatment of anaphylactic reactions are readily available within the patient's vicinity throughout the procedure.

  Drugs that must be available are:

  - Adrenaline 1:10000 10mL Injection
  - Hydrocortisone sodium succinate Injection 100mg
  - Promethazine hydrochloride Injection 25mg.

- Infuse at the **test rate of 40mL/hour for 15 minutes** (monitoring the patient as directed below).
- If tolerated the infusion rate may be increased to **250mL/hour.**

Monitoring

Nursing Observations:

- Blood pressure.
- Heart rate.
- Oxygen saturation.
- Respiratory rate.
- Temperature.

To be taken prior to infusion then every 5 minutes for the first 15 minutes (test dose) then every 15 minutes until the end of the infusion.

If the test dose is not tolerated, stop the infusion and notify the attending medical officer immediately (see adverse reactions below).

Patients should be observed on the ward for 60 minutes after the infusion has finished.

Adverse reactions

Anaphylactic reactions have occurred with intravenous iron polymaltose. Anaphylactic reactions occur most frequently at the start of an infusion, and are characterised by the sudden onset of respiratory difficulties, tachycardia and hypotension. This is the reason for the slow initial infusion rate.

- **Immediate symptoms of adverse reaction**
  - Hypotension with circulatory collapse.
  - Bronchospasm with dyspnoea.
  - Tachycardia.
  - Facial flushing, faintness, joint and muscle pains.
  - Headache.
  - Nausea.
  - Injection site reactions.
- **Delayed symptoms of adverse reaction** (may occur 1-2 days post infusion)
  - Dizziness/ syncope.
  - Chest and/or back pain.
  - Stiffness in limbs and face.
  - Chills and fever.
  - Rash and urticarial.
  - Generalised lymphadenopathy.
  - Angioneurotic oedema.

The attending medical officer may prescribe medications providing symptomatic relief for the presumed adverse reaction.

Presumed adverse reactions may require further investigation by the attending medical officer (e.g. ECG monitoring may be indicated for a patient experiencing chest pain).

Infusions may be continued if (non-anaphylactic) adverse reactions spontaneously resolve or if they resolve after the administration of medications. Dependant on the type of adverse reaction, the infusion may be restarted and continued at a slower rate (e.g. between 60 mL/hour and 220mL/hour).

Anaphylactic reactions are to be recorded in the patient's medical notes, ADR section of the medication chart and on PRIME CI.

References

Australian Medicines Handbook 2014[internet]. Adelaide: Aust. Australian Medicines Handbook Pty Ltd; 2014. Chapter 7,Blood and Electrolytes, Iron. [cited 2014 Nov 13]. Available from: https://amhonline.amh.net.au/chapters/chap-07/anaemias-drugs-for/haematinics/iron

Burridge N, Deidun D, editors. Australian Injectable Drugs Handbook. 6th ed[internet]. Melbourne: Society of Hospital Pharmamcists of Australia; 2014. Iron Polymaltose Complex. [cited 2014 Nov 13]. Available from: http://aidh.hcn.com.au/browse/i/iron_polymaltose_complex

Ferrosig [product information] [internet]. Croydon, Victoria: Sigma Pharmaceuticals (Australia) Ltd; 2012. Ferrosig Product Information. [cited 2014 Nov 13] Available from: https://www.mimsonline.com.au/Search/FullPI.aspx?ModuleName=Product%20Info&searchKeyword=Ferrosig+Injection&PreviousPage=~/Search/QuickSearch.aspx&SearchType=&ID=65580001_2

Garg M, Morrison G, Friedman A, Lau A, Lau D, Gibson PR. A rapid infusion protocol is safe for total dose iron polymaltose: time for change. Intern Med J. 2011 Jul;41(7):548-54.

Iron Polymaltose Infusion (Ferrosig) Procedure, Document ID CHHSD-CoC-Proc-Clin-167-V5-09/15, Cairns Hospital & Health Service, 2012.

2. Day admission patients – Iron deficiency anaemia management

a. Day admission patient – excluding renal patients

- Intravenous infusion (15 minutes) or bolus injection - Ferric Carboxymaltose (Ferinject®).

b. Renal day admission patients only

- Intravenous infusion - Iron Polymaltose (Ferrosig®).

- **Renal patients** may also be treated using Intravenous infusion (15 minutes) or bolus injection- Ferric Carboxymaltose (Ferinject®) for Day admission patients.

2a. Day admission patient – excluding renal patients

Intravenous infusion (15 minutes) or bolus injection - Ferric Carboxymaltose (Ferinject®)

Scope/ Site Specifics

This procedure relates to day patients prescribed intravenous ferric carboxymaltose for the treatment of iron deficiency anaemia.

Ferric carboxymaltose is to be used in day admission areas only (e.g. Cancer Care Units, Infusion Clinic, Day Procedure Unit, and Renal Day Unit).

(Admitted inpatients requiring intravenous iron will be given iron polymaltose – see SLOW or RAPID protocols).

This procedure is NOT TO BE USED for other forms of intravenous iron (e.g. iron polymaltose).

Indications

- Demonstrated intolerance, non-compliance, or lack of efficacy with oral iron despite modification of dose, timing and frequency.
- Intestinal malabsorption of oral medications.
- Ongoing iron (blood) losses that exceed absorptive capacity.
- A clinical need for a rapid iron supply.
- Chronic renal impairment receiving concomitant erythropoietin-stimulating agent.
- For use in patients 14 years or older.

Contraindications

- Patients with a history of severe malnutrition e.g. anoxeria nervosa or known hypophosphataemia such as renal transplant patients on calcineurin inhibitors should not use this iron preparation due to the risk of prolonged hypophosphataemia.
- Known hypersensitivities to ferric carboxymaltose or to any of its excipients.
- Anaemia not attributed to iron deficiency.
- Evidence of iron overload or disturbances in utilization of iron.
- Pregnancy in the first trimester.

Precautions

- Regular monitoring of red cell indices and serum ferritin to detect iron overload. If there is evidence of iron overload, iron therapy should be withheld.
- In liver dysfunction, parenteral iron should only be administered after careful risk/benefit assessment. Parenteral iron should be avoided in patients with hepatic dysfunction where iron overload is a precipitating factor.
- Parenteral iron must be used with caution in case of acute or chronic infection, asthma, eczema, or atopic allergies.
- Each millilitre of undiluted Ferinject contains 5.5mg (0.24mmol) of sodium. Consider when prescribing to patients on sodium restrictions.
- Pregnancy beyond the first trimester (iron polymaltose preferred – category A).

Interactions

- Absorption of oral iron is reduced when administered concomitantly with intravenous iron.
- Oral iron should not be used for at least one week after intravenous iron.

Presentation and storage

- 500 mg/10mL vial (and 100 mg/2mL vial).
- Store below 30°C.
- Do not refrigerate/freeze vial (diluted solution is stable for 12 hours at 2-80°C).
- Inspect vials for sediment and damage before use.
- Each vial of ferric carboxymaltose is intended for single use only. Dispose of any unused product.

Dosing procedure

- The medical officer is to order the required dose of ferric carboxymaltose either:
  - On CHARM for patients receiving treatment in Cancer Care Day Units.

    OR
  - On the intravenous and subcutaneous fluid order form (specifying the required dose, rate of injection/infusion and volume of sodium chloride 0.9% if to be diluted).
  - In addition to completing the CHARM or fluid order, **the medical officer must write a PBS prescription for Ferinject 500mg/10mL** (maximum of 2 vials with 1 repeat - no authority required). Ferinject 100mg vials are not on the PBS.

- The cumulative dose of ferric carboxymaltose must be calculated for each patient individually.
- The cumulative dose required for Hb restoration and repletion of iron stores is calculated by the following Ganzoni formula:

  Cumulative iron dose (mg) = body weight (kg) x (target Hb (g/L)–actual Hb) x 0.24 + iron stores (mg)

  - For weight <35 kg, **target = Hb 130g/L and iron storage depot = 15 mg/kg.**
  - For weight >35 kg, **target Hb = 150g/L and iron storage depot = 500 mg.**
  - For weight < 66 kg: the calculated cumulative dose is to be rounded down to the nearest 100 mg.
  - For weight > 66 kg: the calculated cumulative dose is to be rounded up to the nearest 100 mg.
  - For overweight patients, use ideal body weight for calculation of dosage.
- Example calculation for 60kg patient with Hb of 100g/L (aiming for a target of 150 g/L):

  [60 x (150-100) x 0.24] + 500mg = 1220mg (cumulative iron dose required).

  * **1000mg is the maximum single dose that can be given per week**.

  The remainder of the calculated cumulative iron dose may be administered the following week if deemed clinically appropriate by the treating Medical Officer.

  * **A single dose must also not exceed 20 mg/kg**.
- Ferric carboxymaltose may be administered undiluted as an **intravenous bolus injection**: Doses ≤ 500mg should be administered at a rate of 100mg/minute. Doses of 500-1000mg should be injected over 15 minutes.
- Ferric carboxymaltose may also be administered as an **intravenous drip infusion**: Ferric carboxymaltose must be **diluted only in sterile 0.9% sodium chloride** solution as follows:

Ferric carboxymaltose (Ferinject)	**Iron**	**0.9% Sodium chloride solution**	**Minimum infusion time**
2- 4mL	100-200mg	50mL	3 minutes
4-10mL	200 – 500mg	100mL	6 minutes
10-20mL	500-1000mg	250mL	15 minutes

- Not to be diluted to concentrations less than 2 mg/mL iron.
- After preparing the infusion, it should be used immediately.
- No test dose is required for ferric Carboxymaltose.
- Iron carboxymaltose is to be administered by a Registered Nurse.
- Facilities for cardio-pulmonary resuscitation must be available.

  Drugs that must be available are:

  - Adrenaline 1:10000 10mL Injection
  - Hydrocortisone sodium succinate Injection 100mg
  - Promethazine hydrochloride Injection 25mg.

- Caution should be exercised to avoid paravenous leakage when administering ferric carboxymaltose as brown discolouration and irritation of skin can be long lasting. In case of leakage, iron infusion must be stopped immediately.
- Stop infusion immediately if any other signs of an adverse reaction are present and inform medical officer.

Monitoring

Nursing Observations:

- Blood pressure
- Heart rate
- Oxygen saturation
- Respiratory rate
- Temperature.

To be taken prior to injection/infusion then every 5 minutes during the 15 minute infusion.

If not tolerated, stop injection/infusion and notify the attending medical officer immediately (see adverse reactions below).

The patient may be discharged 30 minutes after infusion if no adverse reactions are observed.

Adverse reactions

Anaphylactic reactions are possible but not common. If the patient displays signs of anaphylaxis the infusion must be stopped immediately and the attending medical officer notified immediately.

- **Immediate symptoms of adverse reaction**
  - Hypotension with circulatory collapse.
  - Bronchospasm with dyspnoea.
  - Tachycardia.
  - Facial flushing, faintness, joint and muscle pains.
  - Headache.
  - Nausea.
  - Injection site reactions.
- **Delayed symptoms of adverse reaction**
  - Dizziness/ syncope.
  - Chest and/or back pain.
  - Stiffness in limbs and face.
  - Chills and fever.
  - Rash and urticarial.
  - Generalised lymphadenopathy.
  - Angioneurotic oedema.
  - Investigational abnormalities: transient decrease in phosphate levels, 10 – 15 % can be severe (<0.4mmol/L) and can be prolonged >6 months, increase in ALT and increase in AST.

The attending medical officer may prescribe medications providing symptomatic relief for the presumed adverse reaction.

Presumed adverse reactions may require further investigation by the attending medical officer (e.g. ECG monitoring may be indicated for a patient experiencing chest pain).

Infusions may be continued if (non-anaphylactic) adverse reactions spontaneously resolve or if they resolve after the administration of medications. Dependant on the type of adverse reaction, the infusion may be restarted and continued at a slower rate (e.g. hypotension is often dose related – decision may be made to administer the infusion over a longer period of time).

Anaphylactic reactions are to be recorded in the patient's medical notes, ADR section of the medication chart and on PRIME.

References

Burridge N, Deidun D, editors. Australian Injectable Drugs Handbook. 6th ed. [internet]. Melbourne: Society of Hospital Pharmamcists of Australia; 2014. Ferric carboxymaltose. [cited 2014 Nov 13]. Available from: https://aidh-hcn-com-au.cknservices.dotsec.com/index.php?option=com_ebooksearch&query=ferric+carboxymaltose

Ferinject [product information] [internet]. Croydon, Victoria: Sigma Pharmaceuticals (Australia) Ltd; 2014. Ferinject Product Information. [cited 2014 Nov 13] Available from: https://www.mimsonline.com.au/Search/FullPI.aspx?ModuleName=Product%20Info&searchKeyword=Ferrosig+Injection&PreviousPage=~/Search/QuickSearch.aspx&SearchType=&ID=65580001_2

Iron (Ferric) Carboxymaltose Infusion (Ferinject) Procedure, Document Number CHHHS-Clin-Proc-ICU-433-V3-05/16, Cairns & Hinterland Hospital & Health Service, 2013.

Full Review: Ferric carboxymaltose (Ferinject), 2014, www.npsradar.org.au

Hardy S, Vandermergel X. International Journal of Rheumatology 2015, Intravenous iron administration and hypophosphataemia in clinical practice.

2b. Renal day admission patients only

Intravenous infusion - Iron Polymaltose (Ferrosig®)

Scope/ Site Specifics

For use in the SCHHS Renal Day Units, located at:

- Nambour General Hospital.
- Gympie Hospital.
- Caloundra Hospital.
- Noosa Hospital (public patients).

Renal Day patients may also be treated with Intravenous infusion (15 minutes) or bolus injection - Ferric Carboxymaltose (Ferinject®). Refer Day admission patients, Iron deficiency anaemia management.

Purpose

To increase iron stores and iron availability for haemopoiesis in patients, by using intravenous iron polymaltose (Ferrosig®) when the intramuscular route is impractical or unacceptable.

Indications for use

- Gastrointestinal intolerance or malabsorption of oral medication.
- Rapid demand (e.g. under epoetin stimulation).
- Severe iron deficiency.

Contraindications

- Known anaphylaxis to iron polymaltose complex.
- Anaemia that is not due to iron deficiency.
- Iron overload.
- Bronchial asthma.
- Pregnancy in the first trimester.

Precautions

- Liver dysfunction.
- Acute or chronic infection eczema, atopic allergies.

Interactions

- Absorption of oral iron is reduced when administered concomitantly with intravenous iron.
- Oral iron should not be used for at least one week after intravenous iron.

Presentation and storage

- A **2mL** ampoule of iron polymaltose (318mg) contains **100mg of elemental iron.**
- Store below 25°C.
- Do not refrigerate or freeze vial (diluted solutions of 2-5mg/mL are stable for 24 hours at 2-8°C).
- Protect from light.

Dosing procedure

- The medical officer is to order the iron polymaltose on the intravenous and subcutaneous fluid order form (order is to state the dose of elemental iron, in specified volume of sodium chloride 0.9%, infused at 40mL/hour for 50mL then increased to 120mL/hour for remainder if tolerated).
- Dilute in 0.9% sodium chloride only. Do not mix with any other fluids or any other drugs.
- Dosage should depend mainly on iron stores and body weight (dosage as directed by nephrologist). Dose is usually:
  - 500mg (of elemental iron) in 100mL 0.9% sodium chloride

    OR
  - 1000mg (of elemental iron) in 250mL 0.9% sodium chloride.
- Iron polymaltose is to be administered by a Registered Nurse.
- Emergency drugs for treatment of anaphylactic reactions must be readily available within the patient's vicinity throughout the procedure.

  Drugs that must be available are:
  - Adrenaline 1:10000 10mL Injection.
  - Hydrocortisone sodium succinate Injection 100mg.
  - Promethazine hydrochloride Injection 25mg.
- Commence the infusion at 40mL/hr. for the first 50mL. If well tolerated then increase the rate to 120mL/hour. (Note: Nausea and epigastric upset may indicate an excessive infusion rate).
- Infusion times:
  - 500mg/100mL should take approximately 1 hour and 40 minutes.
  - 1000mg/250mL should take approximately 3 hours.

Monitoring

Nursing Observations:

- Blood pressure.
- Heart rate.
- Oxygen saturation.
- Respiratory rate.
- Temperature.

To be taken prior to infusion, every 5 minutes for 15 minutes then every 30 minutes for the remainder of the infusion.

If not tolerated, stop the infusion and notify the attending medical officer immediately (see adverse reactions below).

The patient may be discharged 30 minutes after infusion if no adverse reactions are observed.

Adverse reactions

Anaphylactic reactions have occurred with intravenous iron polymaltose. Anaphylactic reactions occur most frequently at the start of an infusion, and are characterised by the sudden onset of respiratory difficulties, tachycardia and hypotension. This is the reason for the slow initial infusion rate.

- **Immediate symptoms of adverse reaction**
  - Hypotension with circulatory collapse.
  - Bronchospasm with dyspnoea.
  - Tachycardia.
  - Facial flushing, faintness, joint and muscle pains.
  - Headache.
  - Nausea.
  - Injection site reactions.
- **Delayed symptoms of adverse reaction** (may occur 1-2 days post infusion)
  - Dizziness/ syncope.
  - Chest and/or back pain.
  - Stiffness in limbs and face.
  - Chills and fever.
  - Rash and urticarial.
  - Generalised lymphadenopathy.
  - Angioneurotic oedema.

The attending medical officer may prescribe medications providing symptomatic relief for the presumed adverse reaction.

Presumed adverse reactions may require further investigation by the attending medical officer (eg ECG monitoring may be indicated for a patient experiencing chest pain).

Infusions may be continued if (non-anaphylactic) adverse reactions spontaneously resolve or if they resolve after the administration of medications. Dependant on the type of adverse reaction, the infusion may be restarted and continued at a slower rate (eg between 60 mL/hour and 220mL/hour).

Anaphylactic reactions are to be recorded in the patient's medical notes, ADR section of the medication chart and on PRIME.

Related Procedure or Supporting Documents

Venofer® (Iron sucrose) administration.

References

Ferrosig [product information] [internet]. Croydon, Victoria: Sigma Pharmaceuticals (Australia) Ltd; 2012. Ferrosig Product Information. [cited 2014 Nov 13] Available from: https://www.mimsonline.com.au/Search/FullPI.aspx?ModuleName=Product%20Info&searchKeyword=Ferrosig+Injection&PreviousPage=~/Search/QuickSearch.aspx&SearchType=&ID=65580001_2

Burridge N, Deidun D, editors. Australian Injectable Drugs Handbook. 6th ed[internet]. Melbourne: Society of Hospital Pharmamcists of Australia; 2014. Iron Polymaltose Complex. [cited 2014 Nov 13]. Available from: http://aidh.hcn.com.au/browse/i/iron_polymaltose_complex

Administration of intravenous iron (02106/CPP), Royal Brisbane & Women's Hospital, August 2008 Protocol for intravenous iron infusion, The Princess Alexandra Hospital, October 2005

Lee A (2008): Iron polymaltose use in chronic kidney disease patients: one units experience. Ren Soc Aust J 5(1)5-8

Newman,E.,Ahmad,I.,Thornton,A.,Gibson,P.R.(2006):Safety of Iron Polymaltose Given as a Total Dose Infusion.Internal Medicine Journal 36,672-674

Haines,M,Gibson,P.(2009):Delayed adverse reactions to total-dose intravenous iron polymaltose, Internal Medicine Journal 39,252-255.

3. Preoperative optimisation

3a Preoperative haemoglobin assessment and optimisation guide – Surgical patients

Blood management strategies should be considered preoperatively to optimise red cell mass prior for SCHHS surgical patients. To assist in the identification of patients that may require iron therapy prior to surgery, consider a review of preoperative haemoglobin and iron status in surgical procedures where significant intraoperative blood loss is expected.

Refer to Appendix 1- Preoperative haemoglobin assessment and optimisation guide (flowchart).

The following Guide has been developed from the NHMRC / ASBT Patient Blood Management Guidelines Module 2 – Perioperative 2012.

References and further reading

Primary Legislation, Policy, Standards or other authority

National Health and Medical Research Council, Patient Blood Management Guidelines: Module 2, Perioperative 2012

EQuIP National Standards (ACSQHC)

Standard 4, Criterion 1: Health service organisations have mechanisms for the safe prescribing, dispensing, supplying, administering, storing, manufacturing, compounding and monitoring of the effects of medicines.

Standard 4, Criterion 3: The clinical workforce is supported for the prescribing, dispensing, administering, storing, manufacturing, compounding and monitoring of medicines.

Templates, forms and other related or supporting documents

Total dose SLOW intravenous iron polymaltose infusion for the management of iron deficiency anaemia http://qheps.health.qld.gov.au/dcho/docs/hpd/mrq/iv-iron-poly-guide.pdf

SCHHS intravenous and subcutaneous fluid order form

Consultation

Key stakeholders who contributed to and/or reviewed this version include:

Clinical Coach – Renal Services

Transfusion Clinical Nurse Consultant

Caloundra Day Procedure Unit Nurse

Ward 2C Nurse

Gympie Day Unit NUM

Pharmacy, Surgical Team Leader

Pharmacists, Surgical Team

CNC Vascular Surgery

Director, Surgical Services

Director of Renal Services

Renal Pharmacist

Nursing/Surgical CNC

Surgical Suites NUM

DEDMS

Director, Surgical Services

SMO General Medicine

Haematologist

Audit / compliance strategy

At the time of document review evidence will be required to demonstrate effectiveness of and compliance to the procedure.

Level of risk	Medium
Audit strategy	Review of related PRIME CI incidents by Medication Incidents Report, tabled at Medicines Committee; Health record documentation audit
Audit tool attached	N/A
Audit date(s)	Annual Reporting
Key elements, indicators and / or outcomes	≥ 80% of patients treated / monitored in accordance with procedure

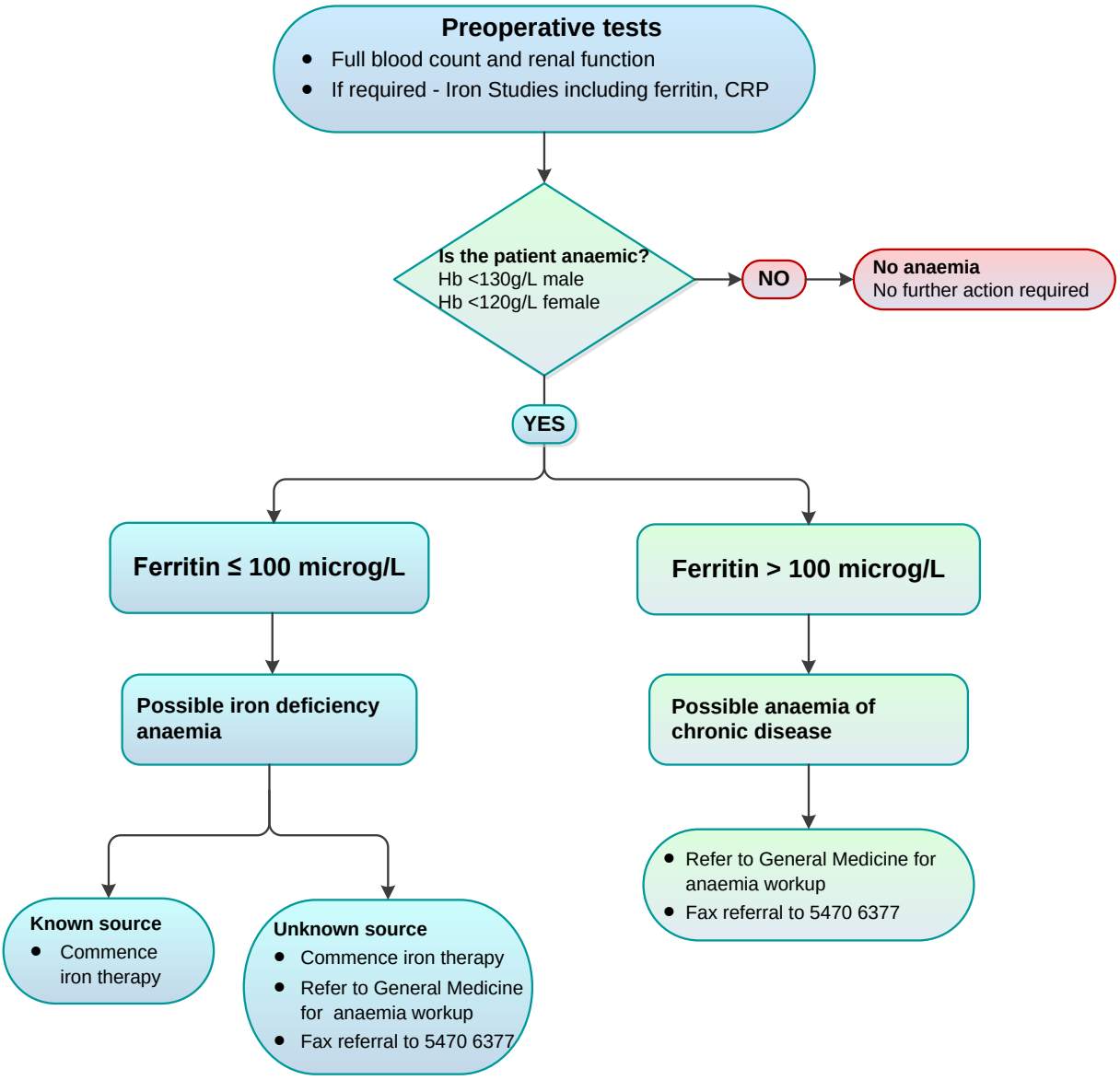
Document revision and approval history

Version	Reviewed / modified by (position)	Revision date	Authorised by (position)	Comment
5.0	Deputy EDMS	07/10/2015	EDMS	

Appendix 1

Preoperative haemoglobin assessment and optimisation – Surgical patients

Always consider patient history and clinical assessment



Iron therapy

IV Iron: if <1 month to surgery or if oral iron contraindicated.

Outpatients:

- Complete day admission patient referral, IV Fluid Order Form and PBS prescription.
- Recommended Dose for patients >66kg is 1000mg Ferric Carboxymaltose.
- Refer Iron infusion procedure, **Day admission patients - Iron deficiency anaemia management:**
  Ferric Carboxymaltose IV infusion (15 minutes) or bolus injection (pages 6-9).

Inpatients:

- Refer to Iron infusion procedure, **Iron deficiency anaemia management:**
  Iron Polymaltose – Standard dose SLOW (4-6hours) IV infusion (page 2) **OR** Total dose RAPID (1 hour) IV infusion (page 3-5)
- Oral Iron: If > 1 month to surgery. Usual dose is 100-200mg elemental Iron daily, prescribed as 1-2 Ferrous Sulfate 325mg CR Tablets (Ferrogradumet) daily in divided doses. Swallow whole, ideally 1 hour before or 2 hours after food. Evaluate response after 1 month.

Refer SCHHS procedure Iron infusion (Doc ID 000205)