Iron Infusion Protocol

Preface

Remote Health Branch recognises that providing selected clients the opportunity to receive iron infusions in remote health centres can be a beneficial service. The logistics and cost associated with arranging travel to hospital or urban renal unit, social disruption and client preference, and workload in renal units, may each be factors in making local administration of iron a preferred option.

On the other hand, providing iron infusions at a remote health centre has its own impact in time and resources. Therefore, in addition to the prerequisites for proceeding with an iron infusion that are noted below, Remote Health Branch clinical staff are advised they are not obliged to administer these infusions unless they are comfortable to do so.

Iron infusions are not described in the CARPA STM 5th Ed or the CRANA Clinical Procedures Manual 2nd Ed. This protocol is provided so that where a decision is made to give iron intravenously at a remote community health centre, staff have guidelines to cover that situation.

Iron infusions may only be administered in DHCS Remote Health Centres when:

- A medical officer is present in the health centre, and either a MO or RAN (with resuscitation skills) will be available throughout the duration of the infusion
- The procedure is carried out in a room with emergency equipment
- Utilising an infusion pump
- The client is not a child

Why is an iron infusion given?

- To correct iron deficiency anaemia, particularly when oral/IM preparations ineffective
- Replace depleted iron stores
- Replenish/maintain iron stores for patients receiving erythropoietin therapy
- To eliminate the need for repeated blood transfusions and the inherent problems of increased antibody formation.

What to look out for when giving an iron infusion?

- Anaphylaxis – will usually occur within minutes of commencing infusion
- Pain in loin, flushing and sweating, headache, nausea, vomiting, joint pain, tachycardia, bronchospasm, urticaria, hypotension, and circulatory collapse - generally associated with rapid infusion.
- Dizziness, stiffness in arms/legs/face, chest and back pain, arthralgia, chills, rash, fever, urticaria, angioneuritic oedema (large wheals and intense itching), and generalised lymphadenopathy - delayed systemic reactions secondary to excessive infusion rates or serum iron overload.
Should adverse reactions be noted at any time throughout the infusion:
- **Stop the infusion**
- **Report immediately to the Medical Officer**
- **Refer to CARPA STM 5th Edition page 18-20 – Anaphylaxis**

**How to give an Iron Infusion**

You will need:
- 500ml 0.9% Sodium Chloride
- **Iron Polymaltose complex (Ferrum H)** – 1 gram
- Drawing up equipment. [10ml syringe, 18g needles x 2]
- IV Giving Set
- IV Infusion Pump
- Additive Labels
- Alcohol Swabs
- Gloves
- Sharps Container
- Medication / IV Fluid order
- Observation sheet
- Resuscitation Equipment
  - Resuscitation Trolley
  - IV Hydrocortisone 100mg
  - IV Adrenaline 1:1000 in 9 mls N/Saline
  - Promethazine 25mg
- A RAN or MO available for the duration of the infusion

Before you commence the infusion, explain to the patient what is planned and reassure them.

Consent must be obtained and this is the responsibility of the Medical Officer.

**What to do:**
- Check pulse, blood pressure, respirations
- Put in an IV cannula, ensuring sound integrity of the cannulation
- Prepare the infusion by:
  - checking the medication order
  - having a second practitioner check the drug, fluid and calculations
  - taking particular care for sterile introduction of the iron to the flask
    (one minute handwash, wear gloves, change drawing up needle to new needle for introduction of iron, alcohol swab port and allow to dry)
  - adding additive label to flask
  - assembling and priming IV tubing
- Utilising the table on the following page to determine infusion rates:
  - Commence a test dose over 30 minutes
  - Monitor pulse and blood pressure 5 minutely
- If no reaction and vital signs are stable:
  - Proceed to normal infusion rate
  - Monitor pulse and blood pressure 15 minutely for first two hours, then 30 minutely till infusion completed
  - **Do not exceed a rate of 4mg/kg/hour**
**IRON INFUSION TABLE**

Using: 1 gram Iron Polymaltose complex (*Ferrum H*) in 500mls 0.9% N/Saline to give → 2mg / ml solution

<table>
<thead>
<tr>
<th>Rate</th>
<th>Calculation</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test dose</td>
<td>Using above solution:</td>
<td>5 minutely</td>
</tr>
<tr>
<td>(over 30 mins)</td>
<td>- 2mg/ml = 20mg/10ml</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 10mls in 30 mins = 20mls in 60 mins</td>
<td></td>
</tr>
<tr>
<td></td>
<td>therefore <strong>20mls/hour</strong></td>
<td></td>
</tr>
</tbody>
</table>

*If no reaction after 30 minutes proceed to:*

<table>
<thead>
<tr>
<th>Infusion post Test dose</th>
<th>Not greater than: 4mg/kg/hour</th>
<th>Example of 60kg patient:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>- 4mg x 60 / hour</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 240mg / hour</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>using 2mg/ml solution</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 240mg/2 = <strong>120ml/hour</strong></td>
</tr>
</tbody>
</table>

*Note: this is a maximum rate of infusion.*

Infusion will last as long as required to give dose.

15 minutely for 2 hours
then
30 minutely till completion

- Report any reactions to the medical officer
- Complete documentation

Further reading:

Iron Infusion Protocol