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# *Administration of intravenous iron at home; risks, reactions and rewards*

Presented by

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Co-investigators

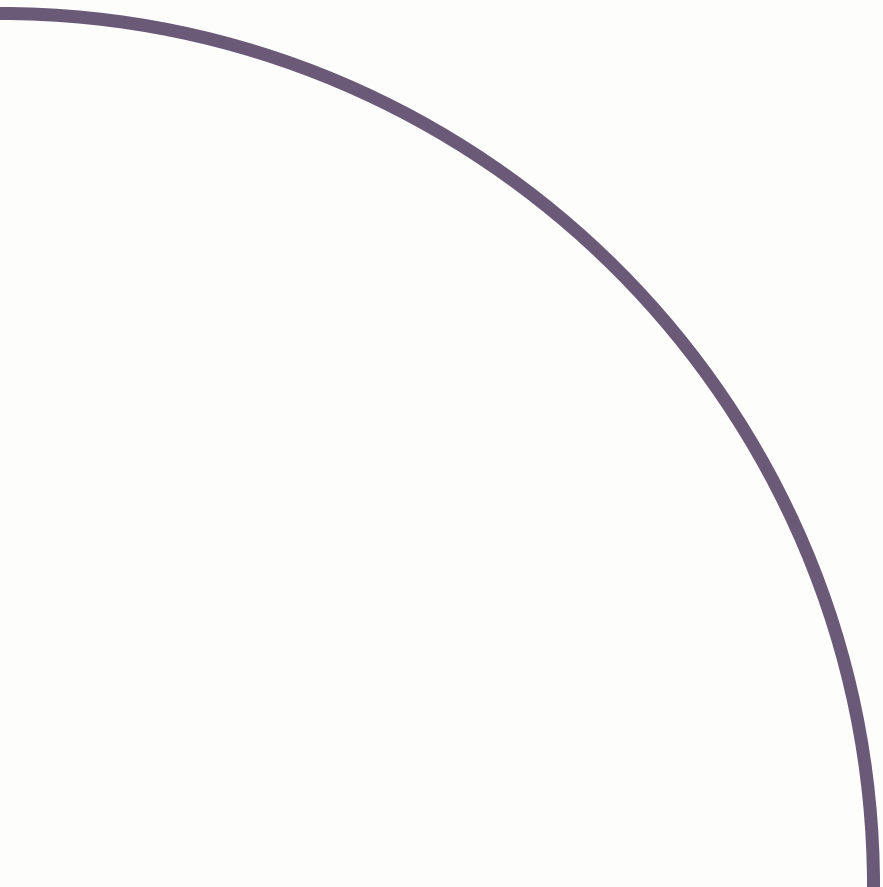
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# *Content*

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*AIM*



To evaluate the safety and patient experience of patients referred to a national home infusion service for the administration of intravenous iron.

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# *About View Health - chemo@home*



## 12+

Years of experience in the home cancer therapy and medical infusion market.

## 1500+

Referrers across multiple specialities, including haematology, oncology, gastroenterology, neurology, rheumatology, cardiology.

## 20,000

Home visits per year, across 5 States (WA, SA, VIC, NSW, QLD) .

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# *Method*



Electronic health records of  
a retrospective cohort of  
patients referred to View  
Health - chemo@home



TWO YEAR PERIOD  
01 January 2022 to  
31 December 2023



- Demographics
- Concomitant infusions
- Net promoter score



- Infusional related reactions (iRRs)
- Use of hypersensitivity-anaphylaxis standard orders
- Transfer to hospital
- Extravasation

## Results

*1948*  
*doses*



1565 Patients

### Median Age

51 years (range 13-101)

### Sex

Female 1175 (75.1%)

Male 390 (24.9%)

### Concomitant Therapy

120 (6.2%) of patients had their iron infusion at the same time as another therapy (cancer 70%, medical infusion 30%)

## Results

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# *Iron Preparation and Dose*

**1777**

Ferric carboxymaltose

**171**

Ferric derisomaltose

**Dose**

250 mg to 1500 mg



# Protocols and Treatment Charts

## Iron Infusion:

### Ferric Carboxymaltose (Ferinject) Ferric Derisomaltose (Monofer®)

#### Background to Iron Deficiency

Iron plays an essential role in life by accepting and donating electrons, involved in oxygen transport, mitochondrial oxidative energy, muscle function, toxins and DNA synthesis. Iron is mostly ingested in the poorly soluble form and to be absorbed, gastric acid is needed to reduce iron to the ferrous state taken up by the duodenal enterocyte. Iron is taken up by a divalent metal transporter on the duodenal brush border and this protein requires a low pH for activity. Iron is transported from the duodenal lining to the blood by the iron transport protein ferroportin 1, as ferrous form. In the circulation, iron is bound to transferrin.

Iron deficiency is associated with impaired work capacity, mental symptoms, tiredness apart from that associated with anaemia. Children with iron deficiency have delayed mental development and ability to learn which is restored by correcting the deficiency.

Iron deficiency is most likely the result of blood loss (menstrual or gastrointestinal) or inadequate absorption (low dietary consumption, gastrointestinal pathology). Iron deficiency which may increase bleeding tendency should be reviewed and ceased when the cause is identified. Iron donation in menstruating females may result in iron deficiency, as on average 100mg iron is lost with each donation. Repleting the lost iron from blood donation can be achieved without iron supplementation.

#### DOSING GUIDELINES

- Maximum single dose of 1,500 mg iron (do not exceed 20 mg iron/kg body weight)
- If dose required exceeds 1500mg or 20mg/kg of body weight, this should be given in two doses seven days apart.
- Do not administer more than one infusion per week
- Elderly patients may be dosed more conservatively

#### Simplified Method (weight ≥ 35kg) – preferred method

| Haemoglobin (Hb) g/L | Body weight 35 to < 70kg | Body weight ≥ 70kg |
|----------------------|--------------------------|--------------------|
| < 100                | 1,500 mg                 | 2,000 mg           |
| ≥ 100                | 1,000 mg                 | 1,500 mg           |

#### Ganzoni Method (weight >35kg)

Total iron dose [mg] = body weight [kg] x (150 – actual Hb [g/L]) x 0.24

Round down to nearest 100 mg if body weight ≤ 66 kg and round up to nearest 100 mg if body weight > 66 kg

| Lab Results                                                                | Date given                                                                                         | / | / |  |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---|---|--|
| Ferritin<br>Tf                                                             | Sodium chloride 0.9% 1000mL, to establish line. Flush with 50mL sodium chloride 0.9%               |   |   |  |
| If indicated:<br>FBP<br>Retics<br>CRP<br>Vit B12<br>Folate<br>U&Es<br>LFTs | Ferric DERISOMALTOSE.....mg<br>in .....mL 0.9% Sodium Chloride IV<br>See below for volume and rate |   |   |  |
|                                                                            | Flush with 50mL sodium chloride 0.9%                                                               |   |   |  |

#### DOSING GUIDELINES

- Maximum single dose of 1,000 mg iron (up to a maximum of 20 mg iron/kg body weight)
- Do not administer more than 1,000 mg iron per week
- Two 500mg doses can be administered in one week, no closer than 48 hours apart
- Elderly patients may be dosed more conservatively

#### Simplified Method (weight ≥ 35kg) – preferred method

| Haemoglobin (Hb) g/L | Body weight 35 to < 70kg | Body weight ≥ 70kg |
|----------------------|--------------------------|--------------------|
| < 100                | 1,500 mg                 | 2,000mg            |
| ≥ 100                | 1,000 mg                 | 1,500mg            |

#### Ganzoni Method (weight >35kg)

Total iron dose [mg] = body weight [kg] x (150 – actual Hb [g/L]) x 0.24 + 500mg

Round down to nearest 100 mg if body weight ≤ 66 kg and round up to nearest 100 mg if body weight > 66 kg

| Lab Results                                                                | Date given                                                                                          | / | / | Start | Stop |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---|---|-------|------|
| Ferritin<br>Tf                                                             | Sodium chloride 0.9% 1000mL, to establish line. Flush with 50mL sodium chloride 0.9%                |   |   |       |      |
| If indicated:<br>FBP<br>Retics<br>CRP<br>Vit B12<br>Folate<br>U&Es<br>LFTs | Ferric CARBOXYmaltose.....mg<br>in .....mL 0.9% Sodium Chloride IV<br>See below for volume and rate |   |   |       |      |
|                                                                            | Flush with 50mL sodium chloride 0.9%                                                                |   |   |       |      |

## Results

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# *Cannulation*

### Attempts and Difficulty

Cannulation was achieved on the first attempt in 85.1% of patients (range 1-5)

Canulator described venous access as difficult in 12.4% of patients



One patient experienced extravasation, with no permanent marking

# Hypersensitivity and Anaphylaxis Procedures and Standing Orders



**View Health  
Hypersensitivity –  
Anaphylaxis Procedure**



**1. TITLE** Hypersensitivity-Anaphylaxis Procedure

**2. PURPOSE**

The purpose of this procedure is to outline the management of hypersensitivity and anaphylaxis by the health service.

health services standard orders for the safe and effective administration of medications and anaphylaxis.

health service in the administration of medications.

anaphylaxis medications and equipment as follows:

|                                    |        |
|------------------------------------|--------|
| Adrenaline (0.3mg/mL, 1mL ampoule) | 2      |
| Epipen autoinjector                | 1      |
| Salbutamol inhaler                 | 1 each |
| Antihistamine                      | 1      |
| Resuscitation equipment            | 2      |

Results

*Toxicity*



iRRs

17 (0.87%) patients  
(chest tightness, SOB, dizziness,  
nausea, hives, itchy, redness,  
sneezing, watery eyes,  
hypotension, vaso-vagal)

HASO  
medications

Administered in 10 patients



Medications

Hydrocortisone  
Antihistamine  
Bronchodilator  
Saline bolus

Completed  
Treatment

16 of 17 patients  
4 reactions in post-infusion  
observation period

Hospital Transfer

One patient  
(Lost consciousness, breathing stopped, pulse  
not detected, defib pads applied (not shocked),  
sternum rub, regained consciousness)

# *Net Provider Score*

93



# Conclusions

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**This is the largest reported cohort of patients treated at home with intravenous iron.**



**Whilst iron infusions are generally safe, iRRs do occur. Hypersensitivity-anaphylaxis protocols need to be in place and medications available for when this occurs.**



**Extravasation, leading to permanent tattooing is well documented. Patient education on the risks of this needs to be explained, and canulators need to be confident and competent.**



**NPS for home-based infusions is very high.**

A healthcare worker, likely a nurse, is shown from the chest up. They are wearing a white headband, a clear face shield, black-rimmed glasses, and a white N95-style respirator mask. They are also wearing blue scrubs. The background is a clinical setting with medical equipment and a window.

# *Acknowledgements*

We gratefully acknowledge the support of the incredible Specialists who trust us with their patients' care, and our team at View Health - chemo@home.

Additionally, and most importantly, we wish to thank our patients and their families, who welcome the home-based team into their homes. We are honoured to be part of your healthcare team.



WEBSITE  
[CHEMOATHOME.COM.AU](http://CHEMOATHOME.COM.AU)



FACEBOOK  
[FACEBOOK.COM/CHEMOATHOME.OZ/](https://FACEBOOK.COM/CHEMOATHOME.OZ/)

