TRANSFUSION ALTERNATIVES

Intravenous (IV) Iron FACTSHEET

1. What are they?
Iron supplements are used to treat iron-deficiency anaemia, but are also given to individuals who are not anaemic but who have evidence of absent body iron stores. This is common in women during their reproductive years due to menstrual blood loss or pregnancy and in children due to the demands of growth.

Iron deficiency in men or post-menopausal women is less common and may indicate a serious underlying condition. In such cases, the cause of the iron deficiency must be established while it is being treated.

The diagnosis of iron deficiency must be established using appropriate tests such as full blood picture (Hb /MCV /MCH /MCHC), ferritin, serum iron and transferrin saturation.

In general, iron is administered orally. Oral iron may be as effective as intravenous (IV) iron providing there is compliance with the prescription.

Intravenous iron supplements are indicated where –

- there is a clinical need to deliver iron rapidly to iron stores
- in patients who cannot tolerate oral iron therapy or who are non-compliant
- in active inflammatory bowel disease where oral iron preparations are ineffective
- malabsorption syndrome

2. Products available.

Generic name	Product name	Company
Iron Dextran	CosmoFer ®	Vitaline Pharma UK http://www.pharmacosmos.com
Iron isomaltoside	MonoFer ®	Vitaline Pharma UK http://www.pharmacosmos.com
Iron sucrose	Venofer ®	Syner-Med Ltd http://www.synermed.co.uk
Iron Sucrose	Ferinject ®	Syner-Med Ltd http://www.synermed.co.uk

Iron dextran (CosmoFer ®) is a complex of iron (III) hydroxide and the carbohydrate dextran. It is available in 2 ml. 5 ml and 10 ml single dose vials containing 50mg elemental iron per ml. Cosmofer ® is administered as a single infusion over 4 to 6 hours.

Iron isomaltoside (MonoFer ®) is a complex of iron (III) hydroxide and the carbohydrate isomaltoside. MonoFer ® can be administered as a single infusion in 30-60 minutes for doses up to 20mg iron/kg body weight. There is no need for a test dose. MonoFer ® is available in 1ml, 5ml and 10ml vials of 100mg/ml.

Iron sucrose (Venofer ®) is a complex of polynuclear iron (III)-hydroxide in sucrose. Venofer ® must be administered as a repeated infusion over a number of weeks. Each 5 ml ampoule of Venofer ® contains 100mg iron (20mg elemental iron per ml).
The normal recommended dosage schedule is 100-200mg iron two or three times a week depending on the haemoglobin level.

Iron Sucrose (Ferinject ®) is a ferric carboxymaltose. It is available in 2 ml and 10 ml single dose vials containing 50mg elemental iron per ml. Ferinject ® may be administered by intravenous injection up to a maximum single dose of 4 ml (200mg of iron) per day but not more than three times a week. Ferinject ® may be given as a single dose of up to 1000 mg (but not exceeding 15 mg/kg/week) as an infusion over 6–15 minutes.

The dose of the agents is calculated based on the haemoglobin (Hb) concentration and body weight of the patient. An additional dose is built into the equation to allow for the replenishment of body iron stores.

The formula for the required total dose of iron in milligrams is: Target Hb (g/L) – Actual Hb (g/L) x weight (kg) x 0.24 + depot iron (mg).

Before administering the first dose to a new patient, a test dose should be given as there is a potential for allergic/anaphylactic reactions (test dose not required for the administration of MonoFer ®).

3. Contraindications

The use of these intravenous (IV) iron preparations is contra-indicated in cases of:

- Known hypersensitivity to either product or any of its components
- Anaemia not attributable to iron deficiency
- Iron overload or disturbances in utilisation of iron

Caution should be exercised in:

- Patients with a history of asthma, eczema or other atopic allergy, because they are more susceptible to experience allergic reactions
- Pregnancy first trimester

The use of these products has not been studied in children and therefore cannot be recommended for use.

4. Guidelines

Cancer and treatment-related anemia v.1 2008 – National Comprehensive Cancer Center (NCCN) *Clinical Practice Guidelines in Oncology* (www.nccn.org).

Goddard AF, McIntyre AS, Scott BB. Guidelines for the management of iron deficiency anaemia. *British Society of Gastroenterology. Gut. 2000* Jun; 46 Suppl 3-4:IV1-IV5.. Erratum in: Gut 2000 Dec; 47(6):872.

5. Bibliography

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5. Muñoz M, Breymann C, García-Erce JA, Gómez-Ramírez S, Comin J, Bisbe E. Efficacy and safety of intravenous iron therapy as an alternative/adjunct to allogeneic blood transfusion. *Vox Sang. 2008* Apr; 94(3):172-83

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