Nephrology and Haematology Directorates

Aintree University Hospitals NHS
NHS Foundation Trust

Where quality matters

Subject: Guidelines for prescription and administration of intravenous Iron Sucrose. 2nd Edition

Objective: To enable selection of appropriate dose of Iron Sucrose in Aintree Renal & haematology Units

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Indications for the Use of Iron Sucrose.

1.	Anaemia of Chronic Kidney disease with ferritin <200 mcg/L or total iron saturation (TSAT) <20%. If the patient is not dialysis dependent use **table 1** to calculate dose of Iron Sucrose. If the patient is dialysis dependent use **table 2** to calculate dose of Iron Sucrose.
2.	For patients in whom oral iron therapy is unsuitable or contraindicated with iron deficiency anaemia and a Haemoglobin of <11 g/dL use **table 3** to calculate dose of Iron Sucrose.

For all other indications consult Summary of Product Characteristics to guide dose selection.

The table below gives a brief list of contraindications. Please see the manufacturer's summary of product characteristics for a full list of cautions, contraindications and side effects
http://www.medicines.org.uk/EMC/medicine/14438/SPC/Venofer+20+mg+ml+Solution+for+Injection/

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Contraindications for Iron Sucrose
1. Non iron deficient anaemia (e.g. haemolytic anaemia)
2. Iron overload or disturbance of iron utilisation
3. History of asthma, eczema or atopic allergy
4. Drug hypersensitivity to parenteral iron preparations
5. Decompensated liver cirrhosis or hepatitis
6. Acute/chronic infection of any type
7. Pregnancy first trimester

Note: Occasionally iron infusion may be given with steroid cover for patients who have shown a mild reaction to the infusion in the past. This should be requested by the referring consultant.

Cautions

Parenterally administered iron preparations can cause allergic or anaphylactoid reactions, which may be potentially fatal. Therefore, treatment for serious allergic reactions and facilities with the established cardio-pulmonary resuscitation procedures should be available.

In patients with liver dysfunction, parenteral iron should only be administered after careful risk/benefit assessment. Parenteral iron administration should be avoided in patients with hepatic dysfunction where iron overload is a precipitating factor, in particular Porphyria Cutanea Tarda (PCT). Careful monitoring of iron status is recommended to avoid iron overload.

Parenteral iron must be used with caution in case of acute or chronic infection. It is recommended that the administration of iron sucrose is stopped in patients with ongoing bacteraemia. In patients with chronic infection a risk/benefit evaluation has to be performed, taking into account the suppression of erythropoiesis.

Hypotensive episodes may occur if the injection is administered too rapidly. Allergic reactions, sometimes involving arthralgia, have been more commonly observed when the recommended dose is exceeded.

Paravenous leakage must be avoided because leakage of Iron Sucrose at the injection site may lead to pain, inflammation, tissue necrosis and brown discoloration of the skin

Iron Sucrose may be administered up to maximum of 200mg three times weekly. If a less rapid correction is required Iron Sucrose may be given as 200mg weekly for the required number of doses.

Table 1

Total Number of doses of Iron Sucrose for non dialysis patients with anaemia of Chronic Kidney Disease

Patient Weight (kg)	Number of doses of Iron Sucrose
30-39	200mg up to a maximum of three times weekly for 3 doses
40-49	200mg up to a maximum of three times weekly for 4 doses
>50	200mg up to a maximum of three times weekly for 5 doses

Consider prescribing a maintenance regime for replacement of iron in patients with anaemia of chronic kidney disease, particularly if they are receiving an Erythropoeisis Stimulating Agent e.g. Aranesp®.

Table 2

Total Number of doses of Iron Sucrose for haemodialysis patients with anaemia of Chronic Kidney Disease

Patient Weight (kg)	Dose of Iron Sucrose Haemodialysis patients	
	Induction	Maintenance dose
30-39	200mg three times weekly for 3 doses	100mg monthly
40-49	200mg three times weekly for 4 doses	100mg fortnightly
>50	200mg three times weekly for 5 doses	100mg weekly

Dialysis patients often require intravenous iron supplementation to be continued after the initial replacement dose. The maintenance dose schedule in Table 2 above may be used and modified as appropriate based on patient's Haematinics.

Table 3

Total Dose of Iron Sucrose for patients with haemoglobin < 11 g/dL who do not have anaemia of chronic kidney disease and in whom oral iron is unsuitable.

How to use table 3 to select the correct dose of Iron Sucrose

- In the left hand column, find the body weight that most closely matches the patient's bodyweight.
- Read across this row to the column headed by the haemoglobin concentration that matches the patient's current state. The reading at this point gives the total dose Iron Sucrose that the patient should receive to correct their iron stores.
- Divide the total dose by 200 to give the number of doses of 200mg of Venofer® that the patient requires to complete their treatment.
- For example an 80kg patient with a haemoglobin of 7g/dL would require 1200mg of Iron Sucrose. This could be given as a 2 week course of 200mg three times per week.

Haemoglobin Concentration g/dL)	5 g/dL	6 g/dL	7 g/dL	8 g/dL	9 g/dL	10 g/dL
Body Weight (Kg)						
35	1000	1000	800	800	600	600
40	1000	1000	800	800	600	600
45	1200	1000	1000	800	800	600
50	1200	1000	1000	800	800	600
55	1200	1200	1000	800	800	600
60	1400	1200	1000	1000	800	600
65	1400	1200	1200	1000	800	600
70	1600	1400	1200	1000	800	600
75	1600	1400	1200	1000	800	600
80	1600	1400	1200	1000	800	600
85	1800	1600	1400	1200	1000	800
90	1800	1600	1400	1200	1000	800

NB This is the total dose of Iron Sucrose needed. It is not the dose to be given in one treatment. The maximum dose of Iron Sucrose that can be given in one week is 200mg three times weekly.

Management of Side Effects of Intravenous Iron

Anaphylactoid reactions

Anaphylactoid reactions to Iron Sucrose are usually evident within a few minutes, and close observation is necessary to ensure recognition. If no adverse reactions are seen after 15 minutes, give the remaining portion of the infusion over at least 30 minutes.

Observe patient every 5 minutes whilst the test dose is being given and then every 15 minutes until infusion is completed. Complete an observations chart recording Heart Rate, Blood Pressure, Respiratory Rate and Temperature.

If at any time during the intravenous administration of Iron Sucrose, any signs of a hypersensitivity reaction or intolerance are detected, administration must be stopped immediately.

Facilities for cardio-pulmonary resuscitation including adrenaline (1:1000) must be available when administering Iron Sucrose

Side Effect	Action Required
Anaphylaxis	**Stop infusion**. Give Hydrocortisone 100mg iv. Give Chlorphenamine 10mg iv. Consider also giving 1mg of Intramuscular adrenaline (1:1000) if the patient shows signs of cardiovascular compromise. Record Anaphylactic reaction in case notes and do not use intravenous iron again in this patient.
Mild allergic reaction	Stop intravenous infusion. Give Chlorphenamine 10mg iv.
Hypotension May be as a result of administering intravenous iron too quickly.	Stop infusion. Lay patient flat. Recommence infusion at half of previous rate when systolic BP has recovered to >100mmHg.
Injection Site Pain May be as a result of extravasation	Stop infusion. Confirm venflon is sited correctly.