

Further Details of Desferrioxamine Dosage, Administration and Toxicity

Administration

SC Bolus Injection

Each 500 mg DFO vial can be diluted in preferably 5 ml water for injections (WFI) and administered twice daily as a slow bolus SC injection. For larger required dose of DFO, the minimum concentration for SC injection is 250 mg/ml, i.e., add 2 ml to each 500 mg vial of DFO required. The product data sheet for DFO states '*Desferal® is not formulated to support SC bolus injection.*' However, due to compliance issues and evidence in the literature for its use as a safe and effective route, slow SC bolus is considered as an option of administration. Local reactions (burning, pain, redness and local swelling) experienced were similar with both infusions and injections.

SC Continuous Infusion

If using 8-12 hour infusion, the DFO is infused using a Graseby® pump. The DFO is diluted in 10 L of water for injections. The 'butterfly' is placed in the arm or abdomen. Patient instructions (as detailed later) are available from BMUT Day Ward.

IV Infusion

DFO may also be given as an IV infusion over 24 hours. Pharmacy will advise as to the most appropriate pump for home use. IV DFO therapy is for patients who have compliance problems. However, as higher doses may be used, it is associated with an increase in side effects especially ophthalmic and auditory.

Toxicity

DFO is relatively non-toxic but a number of complications may arise from excessive dosage, particularly in people with limited iron overload. These complications are dose dependent.

A high frequency of sensorineural hearing loss has been observed in well chelated young patients with low ferritin levels. Reducing DFO dosage was followed by recovery in patients with mild hearing defects but not with severe auditory impairment.

Local hypersensitivity to SC DFO infusion occasionally occurs with local mild reactions – skin reddening and soreness at the site of the SC infusion. These are often caused by DFO being reconstituted above the recommended concentration of 10% (i.e., 500 mg in 5 mL). By increasing the volume of water used to dilute DFO, reactions can be substantially decreased. In addition, a small dose of hydrocortisone (5-10 mg), mixed with dissolved DFO may be effective. Some patients have found that rubbing methylated spirit into the skin is effective.

A rare but serious complication of DFO is yersinia septicaemia. It occurs in 0.7% of chelated patients and requires prompt diagnosis and treatment.