Desferrioxamine (DFO)

Desferrioxamine is a chelating agent indicated in cases of severe clinical toxicity occurring as the result of exposure to iron (Fe).

Indications

Acute Iron poisoning

- See Iron guideline for indications

Contraindications:

- Known hypersensitivity, established anuric renal failure

Adverse effects:

- Non-IgE hyper-sensitivity reactions: urticaria, flushing, bronchospasm, hypotension (more likely to occur with rapid rate of infusion)
- Pulmonary toxicity and Acute Respiratory Distress Syndrome (ARDS) are more likely when administered for > 24 hours
- Secondary infection e.g., Yersinia enterocolitica

Note: chelated Fe complex may cause urine discolouration

Pregnancy:

- Desferrioxamine is not associated with fetal toxicity and is potentially life- saving
- Dose is based on pre-pregnancy weight

Renal failure:

- The dose of desferrioxamine should be ↓ by 50%

Presentation: Desferrioxamine mesylate powder in 500 mg/vial or 2 g/vial

Dose and Administration: Ensure adequate fluid resuscitation prior to commencing DFO infusion

(1) Prepare a 2 g (2000 mg) desferrioxamine solution using one of the following two options:

a. If using 500 mg vials: Prepare 4 x 500 mg vials. Reconstitute each vial with 5 mL water for injection.

b. If using 2 g vials: Reconstitute 2 g vial with 20 mL of water for injection.

(2) Remove 20 mL from a 100 mL normal saline bag, leaving 80 mL

(3) Inject the 2 g (20 mL) final DFO solution into the 80 mL normal saline bag (final concentration = 20 mg/mL)

(4) Begin infusion **slowly** 5 mg/kg/hour, increase by 2.5 mg/kg/hour every 10-15 mins up to max 15 mg/kg/hr

Weight (kg)	Desferrioxamine infusion rate (mL/hour) based on required mg/kg/hour dose				
	5mg/kg/hour	*7.5mg/kg/hour*	*10mg/kg/hour*	*12.5mg/kg/hour*	*15mg/kg/hour*
40	10 mL/hour	15 mL/hour	20 mL/hour	25 mL/hour	30 mL/hour
50	12.5 mL/hour	19 mL/hour	25 mL/hour	31 mL/hour	37.5 mL/hour
60	15 mL/hour	22.5 mL/hour	30 mL/hour	37.5 mL/hour	45 mL/hour
70	17.5 mL/hour	26 mL/hour	35 mL/hour	48 mL/hour	52.5 mL/hour
80	20 mL/hour	30 mL/hour	40 mL/hour	50 mL/hour	60 mL/hour
90	22.5 mL/hour	34 mL/hour	45 mL/hour	56 mL/hour	67.5 mL/hour
100	25 mL/hour	35.5 mL/hour	50 mL/hour	62.5 mL/hour	75 mL/hour
110	27.5 mL/hour	41 mL/hour	55 mL/hour	69 mL/hour	82.5 mL/hour

Discontinuation of desferrioxamine: Treatment for **6 hours** is usually sufficient.

- Maximum dose: 90 mg/kg/24 hours. Consider discontinuation once clinical toxicity (including metabolic acidosis) is resolving and serum iron concentration is < 60 umol/L