



Bonus Monographs



Deferoxamine mesylate

(deh-fer-OX-ah-meen)

PREGNANCY CATEGORY: C

CLASSIFICATION(S):

Antidote, heavy metal antagonist

Rx: Desferal, Desferal

ACTION/KINETICS

Binds to free iron, iron from ferritin, and hemosiderin to form ferrioxamine, which is a water-soluble chelate excreted by the kidneys (urine is a reddish color) as well as in the feces via the bile. Iron is not removed from hemoglobin, myoglobin, or cytochromes. Must be given parenterally for systemic activity. Adequate renal function is necessary for effectiveness. **t_{1/2}**, **IV**: 60 min. Rapidly metabolized by plasma enzymes and excreted in the urine.

USES

(1) Adjunct in treatment of acute iron intoxication. (2) Chronic iron overload including thalassemia. *Investigational*: Accumulation of aluminum in bone in renal failure and in encephalopathy due to aluminum. May be helpful in Alzheimer's disease and some cancers.

CONTRAINDICATIONS

Severe renal disease, anuria. Treatment of primary hemochromatosis.

SPECIAL CONCERNS

Use in pregnancy only if clearly necessary. Use with caution for clients with pyelonephritis. Should not be used in

children under the age of 3 years unless mobilization of 1 mg iron/day or more can be shown. Use deferoxamine and ascorbic acid with caution in geriatric clients due to a greater risk of cardiac decompensation.

SIDE EFFECTS

Following long-term therapy. **Allergic:** Rash, itching, wheal formation, **anaphylaxis**. **GI:** Abdominal discomfort, diarrhea. **Ophthalmologic:** Blurred vision. Rarely, impaired peripheral, night, or color vision; cataracts, decreased visual acuity, retinal pigmentation abnormalities. **Hematologic:** Thrombocytopenia, leukopenia. **Other:** Dysuria, leg cramps, fever, tachycardia, high-frequency hearing loss.

Following rapid IV use. Hypotension, urticaria, erythema.

Following SC use. Local pain, erythema, swelling, pruritus, skin irritation.

HOW SUPPLIED

Powder for injection: 0.5 g, 2 g

DOSAGE

• IM, IV, SC

Acute iron intoxication.

Adults and children over 3 years of age, IM (preferred), initial: 1 g; **then,** 0.5 g q 4 hr for two doses; if necessary, then give 0.5 g q 4–12 hr, not to exceed 6 g/day. **IV infusion (only in emergencies such as CV collapse):** Same as IM at a rate not to exceed 15 mg/kg/hr. Begin IM therapy as soon as possible.

Chronic iron overload.

IM: 0.5–1.0 g/day; **SC:** 1–2 g (20–40 mg/kg/day) given by mini-infusion pump over an 8–24-hr period; **IV:** 2 g (given separately but at same time as

2 DEFEROXAMINE MESYLATE

each unit of blood and in addition to IM administration); IV rate not to exceed 15 mg/kg/hr.

NURSING CONSIDERATIONS

ADMINISTRATION/STORAGE

1. Dissolve by adding 2 mL of sterile water to each ampule.
2. Pain and induration may occur at IM injection site.
3. Have epinephrine available to treat allergic reactions. With iron intoxication or acidosis, have emergency equipment available.
- IV** 4. For IV administration use NSS, D5W, or RL solution and administer *slowly* at a rate not exceeding 15 mg/kg/hr.
5. Discard dissolved drug if not used within 1 week. Protect from light and store above 25°C (77°F).

ASSESSMENT

1. Document indications for therapy, onset of symptoms, and any evidence of pyelonephritis.
2. In poisoning, note time and amount ingested and type of preparation. Document early S&S of iron toxicity: abdominal pain, emesis, and

bloody diarrhea; and late S&S: decreased level of consciousness, metabolic acidosis, and shock.

3. Monitor serum iron, TIBC, ferritin, and urinary iron levels. Report if anuric as chelated iron is excreted by the kidneys. Conduct renal function studies; determine if pregnant.
4. Drug is oto and ocular toxic; obtain baseline exams.

CLIENT/FAMILY TEACHING

1. Pain and induration may occur at administration site.
2. Drug may give the urine a reddish color due to the chelated iron.
3. With a history of pyelonephritis, report hematuria or pain; may be caused by a deferoxamine-induced disease exacerbation.
4. Report any sudden hearing loss or complaints of visual disturbances such as changes in color vision or altered visual acuity; may be drug induced. Report for periodic ophthalmologic and audiometric exams.
5. Practice reliable birth control.

OUTCOMES/EVALUATE

- Relief of symptoms of iron toxicity
- ↓ Serum iron levels