Iron sucrose (eye-cern-au-krose)

**Vesicular**

**Classification**

Therapeutic: antianemics
Pharmacologic: iron supplements

**Pregnancy Category B**

**Indications**

Treatment of iron deficiency anemia in chronic renal failure with or without concurrent erythropoietic therapy. Treatment of iron deficiency in patients undergoing chronic hemodialysis or peritoneal dialysis who are concomitantly receiving erythropoietin.

**Action**

Enters the bloodstream and is transported to the organs of the reticuloendothelial system (liver, spleen, bone marrow) where it becomes separated from the sucrose complex and becomes part of iron stores. A Therapeutic Effects: Resolution of iron deficiency anemia associated with chronic renal failure.

**Pharmacokinetics**

**Absorption:** Following IV administration, the uptake of iron by the reticuloendothelial system is constant at about 40–60 mg/hr. Following IM doses, 60% is absorbed after 3 days; 90% after 1–3 weeks, the balance is absorbed slowly over months.

**Distribution:** Taken up by the reticuloendothelial system.

**Metabolism and Excretion:** Most sucrose is eliminated in urine. Most of the iron remains stored and used on demand. Small amounts eliminated in urine.

**Half-life:** 6 hr.

**TIME/ACTION PROFILE (effects on erythropoesis)**

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<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
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<tr>
<td>IV</td>
<td>days</td>
<td>wks</td>
<td>mos</td>
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**Contraindications/Precautions**

**Contraindicated In:** Anemia not due to iron deficiency; Hemochromatosis, hemosiderosis, or other evidence of iron overload; Hypersensitivity to iron sucrose.

**Use Cautiously In:** Any evidence of tissue iron overload; OB: Use only if clearly needed. Lactation: Safety not established.

**Adverse Reactions/Side Effects**


**Interactions**

Drug-Drug: Chloramphenicol and vitamin E may potentiate the hematologic response to iron therapy.

**Route/Dosage**

**IV (Adults):**

- Dialysis dependent patients—100 mg (5 mL) during each dialysis session for 10 doses (total of 1000 mg); additional smaller doses may be necessary.
- Non-dialysis dependent patients—200 mg (10 mL) on 5 different days within a 14 day period to a total of 1000 mg; may also be given as infusion of 500 mg on day 1 and day 14. Peritoneal Dialysis patients—administered in a total cumulative dose of 1000 mg in 3 divided doses, 14 days apart within a 28 day period with first 2 doses of 300 mg and third dose of 400 mg.

**NURSING IMPLICATIONS**

**Assessment**

- Monitor BP during infusion. May cause hypotension, usually related to rate of administration and total dose administered.
- Assess for hypersensitivity reactions and anaphylactic shock (cough, hypotension, loss of consciousness, hypotension, collapse, convulsions) for at least 30 min following injection. Equipment for resuscitation should be readily available.
- Lab Test Considerations: Monitor hemoglobin, hematocrit, serum ferritin, and transferrin saturation prior to and periodically during therapy. Transferrin saturation values <7 rapidly after IV administration; serum ferritin values may be reliably obtained within 30 min after IV administration. Withhold iron therapy if evidence of iron overload occurs.
- Use case 1Iron sucrose:
- **Pregnancy and Lactation:** Symptoms of iron overdose or too rapid infusion are hypotension, headache, vomiting, nausea, diarrhea, joint aches, paroxysmal ab.
Potential Nursing Diagnoses
Activity intolerance (Indications)

Implementation
- Do not administer iron sucrose concurrently with oral iron, as the absorption of oral iron is reduced. Each 5 mL vial contains 100 mg of elemental iron.
- Test dose of 50 mg may be used.
- Solution is brown. Inspect for particulate matter or discoloration. Do not administer solutions that contain particulate matter or are discolored.
- Pedi: Exercise caution when administering and calculating doses; overdosage can be fatal.

IV Administration
- pH: 10.5–11.1.

Hemodialysis Dependent Patients:
- Most patients require a minimum cumulative dose of 1000 mg of elemental iron, administered over 10 sequential dialysis sessions, to achieve a favorable hemoglobin or hematocrit response.
- Direct IV: May be administered as a slow injection into dialysis line. Each vial must be diluted in a maximum of 250 mL of 0.9% NaCl. Rate: Administer at a rate of 100 mg over 2–5 min, not to exceed one vial per injection. Discard any unused portion.

Peritoneal Dialysis Patients
- Intermittent Infusion: For Peritoneal Dialysis Patients—Diluent: Dilute each dose in a maximum of 250 mL of 0.9% NaCl. Rate: Administer doses of 300 mg over 1.5 hrs and doses of 400 mg over 2.5 hrs.
- Continuous Infusion: May also be administered via infusion into dialysis line for hemodialysis patients. May reduce risk of hypotensive episodes. Each vial must be diluted in a maximum of 100 mL of 0.9% NaCl immediately prior to infusion. Discard unused diluted solution. Rate: Infuse at a rate of 100 mg of iron over at least 15 min.

Non-dialysis Dependent Patients:
- Direct IV: May be administered as a slow injection of 100 mg undiluted. Rate: Administration over 2–5 min.
- Continuous Infusion: Dilute 500 mg in 250 mL of 0.9% NaCl. Rate: Infuse over 3–5 hr or multiples 1 and 1.5. May cause hypotension; monitor closely.
- Additive Incompatibility: Iron sucrose should not be admixed with any other medications or parenteral nutrition solutions.

Patient/Family Teaching
- Explain purpose of iron therapy to patient.
- Instruct patient to report symptoms of hypersensitivity reaction to health care professional immediately.

Evaluation/Desired Outcomes
- Improvement in anemia of chronic renal failure.

Why was this drug prescribed for your patient?