Contraindications

Hypersensitivity to ferric carboxymaltose or any component of the formulation

Warnings/ Precautions

Hypersensitivity: Serious hypersensitivity reactions, including anaphylactic-type reactions (some life-threatening and fatal) have been reported. Monitor during and for at least 30 minutes after administration and until clinically stable. Signs/symptoms of serious hypersensitivity reaction include shock, hypotension, loss of consciousness, and/or collapse. Equipment for resuscitation, medication, and trained personnel experienced in handling emergencies should be immediately available during infusion.

Hypertension: Transient elevations in systolic blood pressure (sometimes with facial flushing, dizziness, or nausea) were observed in studies; usually occurred immediately after dosing and resolved within 30 minutes. Monitor blood pressure following infusion.

Hypophosphatemia: Symptomatic hypophosphatemia, with serious outcomes (eg, fractures, osteomalacia), has been reported. Most cases occurred after repeated exposure in patients without a history of renal impairment and resolved within 3 months; however, may occur after 1 dose. Risk factors may include a history of GI disorders associated with malabsorption of fat-soluble vitamins or phosphate, inflammatory bowel disease, use (current or prior) of medications that affect proximal renal tubular function, hyperparathyroidism, vitamin D deficiency, and malnutrition. Correct hypophosphatemia prior to prescribing initial or repeat treatment.

Laboratory alterations: Lab assays may overestimate serum iron and transferrin bound irons for ~24 hours after infusion.

Monitoring Parameters

Hemoglobin and hematocrit, serum ferritin, transferrin saturation, serum phosphate (in patients at risk for hypophosphatemia who require a repeat course of treatment); vital signs (including blood pressure); monitor for signs/symptoms of hypersensitivity (monitor for ≥30 minutes following the end of administration and until clinically stable); monitor infusion site for extravasation.

Chronic kidney disease: Monitor transferrin saturation and ferritin more frequently following a course of IV iron.

Chemotherapy-associated anemia: Iron, total iron-binding capacity, transferrin saturation, or ferritin levels at baseline and periodically.

Iron deficient patients should have serum ferritin assessed 2 to 4 weeks after infusion course is completed; if serum ferritin >50 to 100 ng/mL is not achieved, then another iron dose should be administered.

Storage

It should be stored below 30°C in the original package. Once the Redoxyfer® vial has been opened, it should be used immediately. After dilution with sodium chloride solution, the diluted solution should be used immediately.

Reference:
Ferric Carboxymaltose Drug Information, UpToDate Database, Accessed in August 2023

Orchid Pharmed
Sky's the Limit

Redoxyfer®
Ferric Carboxymaltose

Description

Redoxyfer® contains ferric carboxymaltose as an active substance.

Dosage Form & Strength

Glass Vial containing 500 mg Iron in 10 mL Solution for injection/infusion.

Mechanism of Action

Ferric carboxymaltose is a colloidal iron (III) hydroxide in complex with carboxymaltose, a carbohydrate polymer that releases iron necessary to the function of hemoglobin, myoglobin, and specific enzyme systems; allows transport of oxygen via hemoglobin. Ferric carboxymaltose is a non-dextran formulation that allows for iron uptake (into reticuloendothelial system) without the release of free iron.

Indications

- **Labeled: Iron-deficiency anemia:** Treatment of iron-deficiency anemia (IDA) in adults and pediatric patients ≥1 year of age with intolerance to oral iron or unsatisfactory response to oral iron;treatment of IDA in adults with nondialysis-dependent chronic kidney disease (ND-CKD).
- **Iron deficiency in patients with heart failure:** Treatment of iron deficiency with or without anemia in adults with New York Heart Association class II or III heart failure to improve exercise capacity.
- **Off-Label:** Iron-deficiency anemia in inflammatory bowel disease; Major abdominal surgery (perioperative anemia management); Chemotherapy-associated anemia; Restless legs syndrome

Dosing: Adult

- **Iron-deficiency anemia, treatment:**

≥50 kg:

- Two-dose regimen: IV: 750 mg once; after ≥7 days, administer a second dose of 750 mg once; maximum dose: 1.5 g per treatment course.
- Single-dose regimen: IV: 15 mg/kg as a single dose; maximum dose: 1 g.

<50 kg: IV: 15 mg/kg once; after ≥7 days, administer a second dose of 15 mg/kg once.

- **Iron-deficiency anemia in inflammatory bowel disease:** IV: 500 or 1,000 mg/dose on day 1 (and if needed based on hemoglobin values, days 8 and 15); patients <67 kg received a maximum of 500 mg per infusion.

- **Major abdominal surgery (perioperative anemia management):** IV: 15 mg/kg prior to surgery; maximum dose: 1000 mg. Postoperatively (within 2 days of surgery), patients received 0.5 mg ferric

carboxymaltose per 1 mL of blood loss (if blood loss was at least 100 mL).

- **Chemotherapy-associated anemia:** IV: 1,000 mg (range: 600 to 1,500 mg); Consider dividing larger doses to a maximum single dose of 750 mg and separate by 7 days.

- **Iron deficiency in patients with heart failure**

	Weight < 70 kg			Weight ≥ 70 kg		
	Hb <10 g/dL	Hb 10 to 14 g/dL	Hb >14 to <15 g/dL	Hb <10 g/dL	Hb 10 to 14 g/dL	Hb >14 to <15 g/dL
Day 1	1 g	1 g	500 mg	1 g	1 g	500 mg
Week 6	500 mg	No dose	No dose	1 g	500 mg	No dose
	Recheck iron studies, if iron deficiency persists at weeks 12, 24, or 36 then redose as needed.					
Week 12	500 mg, only if ID	500 mg, only if ID	500 mg, only if ID	500 mg, only if ID	500 mg, only if ID	500 mg, only if ID
Week 24	500 mg, only if ID	500 mg, only if ID	500 mg, only if ID	500 mg, only if ID	500 mg, only if ID	500 mg, only if ID
Week 36	500 mg, only if ID	500 mg, only if ID	500 mg, only if ID	500 mg, only if ID	500 mg, only if ID	500 mg, only if ID

[a] There are no available data for dosing beyond 36 weeks or in patients with a hemoglobin of ≥15 g/dL.
[b] Hb = hemoglobin; ID = iron deficient.

Note: Iron deficiency is defined as a serum ferritin level <100 mcg/L or a serum ferritin level of 100 to 300 mcg/L with transferrin saturation <20% with or without anemia. There are no data for dosing if hemoglobin is ≥15 g/dL.
Note: The Ganzoni equation has been recommended as an alternative method to calculate total iron deficit and guide dosing. Replete the iron deficit with 500 mg to 1 g dose(s) every ≥7 days as needed (eg, if iron deficit is 1.5 g, administer 750 mg once and 750 mg again in ≥7 days for a total of 1.5 g). Recheck iron studies every 3 to 6 months and replete again if iron deficiency persists.

Iron deficit (mg) = weight (kg)[a] × (target hemoglobin of 15 g/dL − actual hemoglobin in g/dL) × 2.4 + 500 mg

[a] Actual body weight; for patients with obesity, use ideal body weight.

- **Restless legs syndrome:** IV: 1 g as a single dose. May repeat at least 12 weeks after initial infusion based on initial response, recurrence of restless legs syndrome symptoms, and if serum ferritin <300 mcg/L and transferrin saturation (TSAT) <45%.

Note: For use as an alternative to oral iron repletion for patients with malabsorption, intolerance or lack of response to oral therapy, or need for rapid response to therapy; not recommended for initiation of therapy in patients with serum ferritin >100 mcg/L or transferrin saturation (TSAT) ≥45%.

Dosing: Pediatric

- **Iron-deficiency anemia, treatment: Children and Adolescents:**

• Two-dose regimen: IV: 15 mg/kg/dose for 2 doses separated by ≥7 days; maximum dose: 750 mg/dose (manufacturer's labeling).
• Single- dose regimen: Limited data available: IV: 15 to 20 mg/kg/dose as a single dose; maximum dose: 1,000 mg/dose. Dosing based on calculated iron deficit using the Ganzoni equation has also been reported; reported doses range from 10 to 32 mg/kg/dose with maximum single doses of 1,000 mg/dose.

- **Restless sleep disorder: Very limited data available: Children ≥5 years and Adolescents:** IV: 15 mg/kg as a single dose; maximum dose: 750 mg/dose.

Administration

- **Adult:** IV: Administer as slow IV push (undiluted) at a rate of ~100 mg/minute (doses ≤750 mg) or over 15 minutes (1g dose). May also administer as an IV infusion (diluted) over at least 15 minutes. Avoid extravasation (may cause persistent discoloration at the extravasation site). Monitor; if extravasation occurs, discontinue administration at that site.

- **Pediatric:** Parenteral: IV: In prospective and retrospective pediatric studies, doses were infused over 15 to 30 minutes. Administer diluted solution over ≥15 minutes (manufacturer's labeling); maximum infusion time of 60 minutes has been reported. For doses of 750 mg, may administer undiluted as a slow IV push at a rate of ~100 mg/minute; for doses of 1,000 mg, administer over 15 minutes. Avoid extravasation (may cause persistent discoloration at the extravasation site). If extravasation occurs, discontinue administration at that site.

Adverse Reactions

>10%: Endocrine & metabolic: Hypophosphatemia (children, adolescents: 13%; adults: 1% to 2%)
1% to 10%: Cardiovascular: Flushing (≤4%), hypertension (1% to 4%), hypotension (≤1%); increased systolic blood pressure (6%); **Dermatologic:** Erythema of skin (≤3%), skin discoloration at injection site (≤1%), skin rash (children, adolescents: 8%; adults: 1%); **Gastrointestinal:** Dysgeusia (1%), gastrointestinal infection (children, adolescents: 3%), nausea (1% to 7%), vomiting (≤5%); **Hematologic & oncologic:** Decreased platelet count (children, adolescents: 3%), decreased white blood cell count (children, adolescents: 3%); **Hepatic:** Increased liver enzymes (1% to 3%); **Local:** Injection site reaction (3% to 8%); **Nervous system:** Dizziness (1% to 2%), headache (children, adolescents: 5%; adults:1%); **Respiratory:** Nasopharyngitis (children, adolescents: 3%)

Pregnancy Considerations

Adverse developmental outcomes have not been reported following maternal use of ferric carboxymaltose in pregnancy. However, due to limited safety data in early pregnancy, use of intravenous iron is generally not started until the second or third trimester (should be avoided during the first trimester).

Breastfeeding Consideration

Iron is present in breast milk, according to the manufacturer, the decision to breastfeed during therapy should consider the risk of infant exposure, the benefits of breastfeeding to the infant, and benefits of treatment to the mother. Parenteral iron therapy may be used in postpartum patients with uncorrected anemia at delivery who cannot tolerate, do not respond to, or are noncompliant with oral iron therapy, or the severity of anemia requires prompt management.