For the use of a Registered Medical Practitioner or a Hospital or a Laboratory only

NEW REDULID HB

1. **Generic Name**

Iron (Ferric Pyrophosphate) With Vitamin C, Vitamin B12, Folic Acid, Glycine Tablet

2. **Qualitative and quantitative Composition:**

Nutritional information

No. of servings: 150

Serving Size: 1 Tablet (0.7797 g)

Nutritional information	**Per 100 gm**	**Per Tablet**	**% RDA as per serve**
Energy	321.92 Kcal	2.51 Kcal	0.13*
Protein	5.13 g	0.04 g	0.07
Carbohydrates	66.69 g	0.52 g	#
Total Sugars	26.93 g	0.21 g	#
Added Sugars	26.93 g	0.21 g	0.42*
Total Fat	3.85 g	0.03 g	0.04*
Saturated Fat	2.57 g	0.02 g	0.09*
Trans Fat	0.00 g	0.00 g	0.00*
Cholesterol	0.00 mg	0.00 mg	#
Sodium	37.19 mg	0.29 mg	0.01*
Amino Acid			
Glycine	1282.54 mg	10 mg	#
Vitamins			
Vitamins C	6412.72 mg	50 mg	62.50
Folic Acid	32063.61 mcg	250 mcg	74.56
Vitamins B12	96.19 mcg	0.75 mcg	30.61
Mineral			
Iron	3462.87 mg	27 mg	100.00

% RDA expressed as per ICMR 2020, for Pregnant women

*%RDA expressed on the basis of 2000-kcal energy required for an average adult

Ingredients: Diluent (Maltodextrin), Ferric Pyrophosphate, Diluent (lactose Monohydrate), Bulking Agent [INS 460 (i)], L – Ascorbic Acid, Disintegrant (INS 468), Binder (INS 1201), Disintegrant (Sodium Starch Glycolate), Coating Agent (Hydroxy propyl methyl cellulose), Glycine, Vehicle (Polyethylene glycol), Anticaking agent (Magnesium Aluminometasilicate), Antisticking Agent [INS 470(iii)], Synthetic Colour (INS 124), Glidant [INS 553(iii)] Coating agent (Ethyl Celluose), Colour (INS 171), Emulsifier [INS 322(i)], n-pteroyl glutamic acid Cyanocobalamin.

Contains Milk, may contain Soy and Nuts

3. Dosage form and strength

Dosage form: Tablet

Strength: 1 Tablet (0.7797 g)

4. Clinical particulars

4.1. Therapeutic indication

- The prophylaxis of iron and folic acid deficiencies during pregnancy.
- Parenteral nutrition when oral or enteral alimentation is impossible, insufficient or contraindicated.
- For patient undergoing long-term parenteral nutrition, the addition of a lipid emulsion to NEW REDULID HB in order to supply both calories and essential fatty acids is possible.

NEW REDULID HB is also indicated for the treatment of iron deficiency in the following indications:

- Where there is a clinical need for a rapid iron supply.
- In patients who cannot tolerate oral iron therapy or who are non-compliant,
- In active inflammatory bowel disease where oral iron preparations are ineffective,
- In chronic kidney disease when oral iron preparations are less effective.

4.2. Posology and method of administration

Posology

Recommended Usage Level: 1 Tablet daily.

The product is not to be used by children under 5 years, adolescents and elderly, except when medically advised by a physician or certified dietician or nutritional professional.

This product to be taken by Pregnant, Nursing and lactating women under medical advice of physician or certified dietician or nutritional professional.

NOT FOR PARENTERAL USE.

Method of administration

Swallow intact tablet with water.

4.3. Contraindications

Iron:

- Hypersensitivity to the active substance, to it or any of its excipients.
- Known serious hypersensitivity to other parenteral iron products.
- Anaemia not caused by iron deficiency.
- Evidence of iron overload or hereditary disturbances in utilisation of iron.

Glycine:

- Known hypersensitivity to any of the active substances or excipients listed or to the components of the container.

- Amino acid metabolism disorders
- Severe hyperglycaemia
- Metabolic acidosis, hyperlactataemia
- It contains electrolytes should not be used in patients with hyperkalaemia, hypernatraemia and in patients with pathologically elevated plasma concentrations of magnesium, calcium and/or phosphorus.
- As for other calcium-containing infusion solutions, concomitant treatment with ceftriaxone and it is contraindicated in newborns (≤28 days of age), even if separate infusion lines are used (risk of fatal ceftriaxone calcium salt precipitation in the neonate's bloodstream), regarding co-administration in older patients.

Folic Acid:

Contra-indicated in patients with megaloblastic anaemia due to vitamin B12 deficiency and in patients with a known hypersensitivity to the product or its ingredients. Not intended for the prevention or treatment of anaemia in men, non-pregnant women or children.

Use in patients with haemosiderosis, haemochromatosis and haemoglobinopathies.

Use in patients anaemias other than those due to iron deficiency.

Use in patients with inflammatory bowel disease, including regional enteritis and ulcerative colitis, intestinal strictures and diverticulae.

Concomitant use with parenteral iron.

Use in patients with active peptic ulcer.

Use in patients who require repeated blood transfusion.

4.4. Special warnings and precautions for use

Warning: Not recommended for lactose intolerant people

Iron: Parenterally administered iron preparations can cause hypersensitivity reactions including serious and potentially fatal anaphylactic/anaphylactoid reactions. Hypersensitivity reactions have also been reported after previously uneventful doses of parenteral iron complexes including iron sucrose. There have been reports of hypersensitivity reactions which progressed to Kounis syndrome (acute allergic coronary arteriospasm that can result in myocardial infarction. In several studies performed in patients who had a history of a hypersensitivity reaction to iron dextran or ferric gluconate, It was shown to be well tolerated. For known serious hypersensitivity to other parenteral iron product.

The risk of hypersensitivity reactions is enhanced for patients with known allergies including drug allergies, including patients with a history of severe asthma, eczema or other atopic allergy.

There is also an increased risk of hypersensitivity reactions to parenteral iron complexes in patients with immune or inflammatory conditions (e.g. systemic lupus erythematosus, rheumatoid arthritis).

It should only be administered when staff trained to evaluate and manage anaphylactic reactions is immediately available, in an environment where full resuscitation facilities can be assured. Each patient should be observed for adverse effects for at least 30 minutes following each It injection. If hypersensitivity reactions or signs of intolerance occur during administration, the treatment must be stopped immediately. Facilities for cardio respiratory resuscitation and equipment for handling acute anaphylactic/anaphylactoid reactions should be available, including an injectable 1:1000 adrenaline solution. Additional treatment with antihistamines and/or corticosteroids should be given as appropriate.

In patients with liver dysfunction, parenteral iron should only be administered after careful risk/benefit assessment. Parenteral iron administration should be avoided in patients with hepatic dysfunction where iron overload is a precipitating factor, in particular Porphyria Cutanea Tarda (PCT). Careful monitoring of iron status is recommended to avoid iron overload.

Parenteral iron should be used with caution in the case of acute or chronic infection. It is recommended that the administration of It is stopped in patients with bacteraemia. In patients with chronic infection, a risk/benefit evaluation should be performed.

Paravenous leakage must be avoided because leakage of It at the injection site can lead to pain, inflammation and brown discoloration of the skin.

It contains up to 7 mg sodium per mL, equivalent to 0.4% of the WHO recommended maximum daily intake of 2 g sodium for an adult.

Folic Acid: FA is intended only for the prevention of iron and folic acid deficiencies in pregnancy; the dose of folic acid provided is inadequate for the treatment of megaloblastic anaemias. The development of anaemia despite prophylaxis with It FA requires further investigation and appropriate therapy.

Iron preparations should be used with caution in patients with erythropoietic protoporphyria.

Iron preparations colour the faeces black, which may interfere with tests used for detection of occult blood in the stools.

The label will state:

“Important warning: Contains iron. Keep out of reach and sight of children, as overdose may be fatal”.

This will appear on the front of the pack within a rectangle in which there is no other information.

Glycine:

Warnings:

Hypersensitivity/infusion reactions including hypotension, hypertension, peripheral cyanosis, tachycardia, dyspnoea, vomiting, nausea, urticaria, rash, pruritus, erythema, hyperhidrosis, pyrexia, and chills have been reported with formulations.

Anaphylaxis has been reported with other parenteral nutrition products.

Special clinical monitoring is required at the beginning of any intravenous infusion. Should any abnormal sign or symptom occur, e.g. for hypersensitivity or infusion reaction, the infusion must be stopped immediately.

Solutions containing glucose should be used with caution, if at all, in patients with known allergy to corn or corn products.

Pulmonary vascular precipitates have been reported in patients receiving parenteral nutrition. In some cases, fatal outcomes have occurred. Excessive addition of calcium and phosphate increases the risk of the formation of calcium phosphate precipitates. Precipitates have been reported even in the absence of phosphate salt in the solution. Precipitation distal to the in-line filter and suspected in vivo precipitate formation have also been reported.

If signs of pulmonary distress occur, the infusion should be stopped and medical evaluation initiated.

In addition to inspection of the solution, the infusion set and catheter should also periodically be checked for precipitates.

In patients older than 28 days (including adults), ceftriaxone must not be administered simultaneously with intravenous calcium-containing solutions, including through the same infusion line (e.g., via a Y-connector). If the same infusion line is used for sequential administration, the line must be thoroughly flushed with a compatible fluid between infusions.

Infection and sepsis may occur as a result of the use of intravenous catheters to administer parenteral formulations, poor maintenance of catheters or contaminated solutions. Immunosuppression and other factors such as hyperglycaemia, malnutrition and/or their underlying disease state may predispose patients to infectious complications.

Careful symptomatic and laboratory monitoring for fever/chills, leukocytosis, technical complications with the access device, and hyperglycaemia can help recognize early infections.

The occurrence of septic complications can be decreased with heightened emphasis on aseptic technique in catheter placement, maintenance, as well as aseptic technique in nutritional formula preparation.

Refeeding severely undernourished patients may result in the refeeding syndrome that is characterized by the shift of potassium, phosphorus, and magnesium intracellularly as the patient becomes anabolic. Thiamine deficiency and fluid retention may also develop. Careful monitoring and slowly increasing nutrient intakes while avoiding overfeeding can prevent these complications.

Hypertonic solutions may cause venous irritation if infused into a peripheral vein. The choice of a peripheral or central vein depends on the final osmolarity of the mixture.

The general accepted limit for peripheral infusion is about 800 mOsm/l but it varies considerably with the age and the general condition of the patient and the characteristics of the peripheral veins.

Do not connect bags in series in order to avoid air embolism due to possible residual air contained in the primary bag.

Precautions:

Severe water and electrolyte equilibration disorders, severe fluid overload states, and severe metabolic disorders should be corrected before starting the infusion.

Metabolic complications may occur if the nutrient intake is not adapted to the patient's requirements, or the metabolic capacity of any given dietary component is not accurately assessed. Adverse metabolic effects may arise from administration of inadequate or excessive nutrients or from inappropriate composition of an admixture for a particular patient's needs.

Frequent clinical evaluation and laboratory determinations are necessary for correct monitoring during administration. These should include ionogram and kidney and liver function tests.

The electrolyte requirements of patients receiving the solutions should be carefully determined and monitored especially for the electrolyte-free solutions. without electrolytes should not be used in cases of hypokalaemia and hyponatraemia.

Glucose intolerance is a common metabolic complication in severely stressed patients. With the infusion of the products, hyperglycaemia, glycosuria, and hyperosmolar syndrome may occur.

Blood and urine glucose should be monitored on a routine basis and for diabetics insulin dosage should be adapted, if necessary.

Use with caution in patients with renal insufficiency, particularly if hyperkalaemia is present, because of the risk of developing or worsening metabolic acidosis and hyperazotemia if extra-renal waste removal is not being performed. Fluid and electrolyte status should be closely monitored in these patients. In case of severe kidney failure, specially formulated amino acid solutions should be preferred.

Caution should be exercised in administering it to patients with adrenal insufficiency.

Care should be taken to avoid circulatory overload particularly in patients with pulmonary oedema, cardiac insufficiency and/or failure. Fluid status should be closely monitored.

In patients with pre-existing liver disease or hepatic insufficiency, apart from routine liver function tests, possible symptoms of hyperammonaemia should be controlled.

Hepatobiliary disorders including cholestasis, hepatic steatosis, fibrosis and cirrhosis, possibly leading to hepatic failure, as well as cholecystitis and cholelithiasis are known to develop in some patients on parenteral nutrition. The aetiology of these disorders is thought to be multifactorial and may differ between patients. Patients developing abnormal laboratory

parameters or other signs of hepatobiliary disorders should be assessed early by a clinician knowledgeable in liver diseases in order to identify possible causative and contributory factors, and possible therapeutic and prophylactic interventions.

Increase in blood ammonia levels and hyperammonemia may occur in patients receiving amino acid solutions. In some patients this may indicate the presence of a congenital disorder of amino acid metabolism or hepatic insufficiency.

Blood ammonia should be measured frequently in newborns and infants to detect hyperammonemia, which may indicate the presence of a congenital abnormality of amino acid metabolism.

Depending on extent and aetiology, hyperammonemia may require immediate intervention.

A too rapid infusion of amino acids may result in nausea, vomiting and chills. In such cases, discontinue the infusion immediately.

In general, dose selection for an elderly patient should be cautious, reflecting the greater frequency of decreased hepatic, renal, or cardiac function, and of concomitant disease or drug therapy.

Paediatric population:

There have been no studies performed in the paediatric population.

See above regarding monitoring for hyperammonemia in paediatric patients.

Light exposure of solutions for intravenous parenteral nutrition, especially after admixture with trace elements and/or vitamins, may have adverse effects on clinical outcome in neonates, due to generation of peroxides and other degradation products. When used in neonates and children below 5 years, Clinimix should be protected from ambient light until administration is completed.

4.5. Drugs interactions

Iron: As with all parenteral iron preparations, it should not be administered concomitantly with oral iron preparations since the absorption of oral iron is reduced. Therefore, oral iron therapy should be started at least 5 days after the last injection of it.

Folic Acid: Iron chelates with concomitantly administered tetracyclines, and absorption of both agents may be impaired, allow an interval of 2-3 hours if treatment with both drugs is necessary. Iron also chelates with acetohydroxamic acid reducing the absorption of both.

Absorption of iron may be reduced in the presence of antacids and proton pump inhibitors which reduce stomach acid. Iron absorption may also be reduced in the presence of food (e.g. tea, coffee, wholegrain cereals, eggs and milk), neomycin and cholestyramine. Bicarbonates, carbonates, oxalates, or phosphates may impair the absorption of iron by the formation of insoluble complexes. Iron absorption may be increased by ascorbic or citric acid.

Iron absorption may be reduced with calcium, oral magnesium salts and other mineral supplements, zinc and trientine. If treatment with both iron and trientine is necessary a suitable interval is advised.

The response to iron may be delayed in patients receiving systemic chloramphenicol. Chloramphenicol delays plasma clearance of iron and incorporation of iron into red blood cells by interfering with erythropoiesis.

The hypotensive effect of methyldopa is reduced by iron.

Concomitant use of iron and dimercaprol should be avoided as toxic complexes may form.

Iron reduces the absorption of fluoroquinolones, levodopa, carbidopa, entacapone, bisphosphonates, penicillamine, thyroid hormones such as levothyroxine (give at least 2 hours apart), mycophenolate, cefdinir and zinc. Iron possibly reduces the absorption of eltrombopag (give at least 4 hours apart).

Serum levels of anticonvulsant drugs may be reduced by the co-administration of folate e.g. folic acid possibly reduces the plasma concentration of phenobarbital, phenytoin and primidone.

Concomitant use of folic acid with raltitrexed should be avoided.

Absorption of folic acid is possibly reduced by sulfasalazine.

Glycine: No interaction studies have been performed.

As for other calcium-containing infusion solutions, concomitant treatment with ceftriaxone and it is contraindicated in newborns (≤28 days of age), even if separate infusion lines are used (risk of fatal ceftriaxone calcium salt precipitation in the neonate's bloodstream).

In patients older than 28 days (including adults), ceftriaxone must not be administered simultaneously with intravenous calcium-containing solutions, including it through the same infusion line.

If the same infusion line is used for sequential administration, the line must be thoroughly flushed with a compatible fluid between infusions.

Because of its potassium content, it should be administered with caution in patients treated with agents or products that can cause hyperkalemia or increase the risk of hyperkalemia, such as potassium-sparing diuretics (amiloride, spironolactone, triamterene), with ACE inhibitors, angiotensin II receptor antagonists, or the immunosuppressants tacrolimus and cyclosporine.

4.6. Use in special populations (such as pregnant women, lactating women, paediatric patients, geriatric patients etc.)

Iron:

Pregnancy

There is no data from the use of iron sucrose in pregnant women in the first trimester. Data (303 pregnancy outcomes) from the use of It in pregnant women in the second and third trimester showed no safety concerns for the mother or newborn.

A careful risk/benefit evaluation is required before use during pregnancy and It should not be used during pregnancy unless clearly necessary.

Iron deficiency anaemia occurring in the first trimester of pregnancy can in many cases be treated with oral iron. Treatment with It should be confined to second and third trimester if the benefit is judged to outweigh the potential risk for both the mother and the foetus.

Foetal bradycardia may occur following administration of parenteral irons. It is usually transient and a consequence of a hypersensitivity reaction in the mother. The unborn baby should be carefully monitored during intravenous administration of parenteral irons to pregnant women.

Animal studies do not indicate direct or indirect harmful effects with respect to reproductive toxicity.

Breast-feeding

There is limited information on the excretion of iron in human milk following administration of intravenous iron sucrose. In one clinical study, 10 healthy breast-feeding mothers with iron deficiency received 100 mg iron in the form of iron sucrose. Four days after treatment, the iron content of the breast milk had not increased and there was no difference from the control group (n=5). It cannot be excluded that newborns/infants may be exposed to iron derived from It via the mother's milk, therefore the risk/benefit should be assessed.

Preclinical data do not indicate direct or indirect harmful effects to the nursing child. In lactating rats treated with 59Fe-labelled iron sucrose, low secretion of iron into the milk and transfer of iron into the offspring was observed. Non metabolised iron sucrose is unlikely to pass into the mother's milk.

Fertility

No effects of iron sucrose treatment were observed on fertility and mating performance in rats.

Folic Acid:

Fertility, pregnancy and lactation

It is suitable for use during pregnancy and breastfeeding.

Glycine:

Fertility, pregnancy and lactation

The safety of glycine in fertility, pregnancy and lactation has not been proven due to the lack of clinical studies. The prescriber should consider the benefit/risk relationship in order to administer glycine to pregnant or breast-feeding women.

4.7. Effects on ability to drive and use machines

Iron:

In the case of symptoms of dizziness, confusion or light headedness following the administration of it, patients should not drive or use machinery until the symptoms have ceased.

Folic Acid: FA has no influence on the ability to drive and use machines.

Glycine: No studies on the effects on the ability to drive and use machines have been performed.

4.8. Undesirable effects

Iron: The most commonly reported adverse drug reaction in clinical trials with it was dysgeusia, which occurred with a rate of 4.5 events per 100 subjects. The most important serious adverse drug reactions associated with it are hypersensitivity reactions, which occurred with a rate of 0.25 events per 100 subjects in clinical trials. Anaphylactoid/anaphylactic reactions were reported only in the post-marketing setting (estimated as rare); fatalities have been reported.

The adverse drug reactions reported after the administration of It in 4,064 subjects in clinical trials as well as those reported from the post-marketing setting are presented in the table below.

System Organ Class	Common (≥1/100, <1/10)	Uncommon (≥1/1,000, <1/100)	Rare (≥1/10,000, <1/1,000)	Frequency not known[1)]
Immune system disorders		Hypersensitivity		Anaphylactoid/anaphylactic reactions, angioedema
Nervous system disorders	Dysgeusia	Headache, dizziness, paraesthesia, hypoaesthesia	Syncope, somnolence	Depressed level of consciousness, confusional state, loss of consciousness, anxiety, tremor
Cardiac disorders			Palpitations	Bradycardia, tachycardia, Kounis syndrome
Vascular disorders	Hypotension, hypertension	Flushing, phlebitis		Circulatory collapse, thrombophlebitis
Respiratory, thoracic and mediastinal disorders		Dyspnoea		Bronchospasm
Renal and urinary disorders			Chromaturia	
Gastrointestinal disorders	Nausea	Vomiting, abdominal pain, diarrhoea, constipation		
Skin and subcutaneous tissue disorders		Pruritus, rash		Urticaria, erythema

System Organ Class	Common (≥1/100, <1/10)	Uncommon (≥1/1,000, <1/100)	Rare (≥1/10,000, <1/1,000)	Frequency not known[1)]
Musculoskeletal and connective tissue disorders		Muscle spasm, myalgia, arthralgia, pain in extremity, back pain		
General disorders and administration site conditions	Injection/infusion site reaction[2)]	Chills, asthenia, fatigue, oedema peripheral, pain	Chest pain, hyperdrosis, pyrexia	Cold sweat, malaise, pallor, influenza like illness[3)]
Investigations		Alanine aminotransferase increased, aspartate aminotransferase increased, gamma-glutamyltransferase increased, serum ferritin increased	Blood lactate dehydrogenase increased	

[1)] Spontaneous reports from the post-marketing setting; estimated as rare

[2)]The most frequently reported are: injection/infusion site pain, -extravasation, -irritation, -reaction, -discolouration, -haematoma, -pruritus.

[3)] Onset may vary from a few hours to several days.

Folic Acid: Side effects may be minimised by taking the product with or after food or by starting with a small dose and increasing gradually.

The incidences of undesirable effects are tabulated below. They are listed by system organ class and frequency defined as follows:

• Very common (≥1/10)

• Common (≥1/100 to <1/10)

• Uncommon (≥1/1,000 to <1/100)

• Rare (≥1/10,000 to <1/1,000)

• Very rare (<1/10,000)

• Not known (cannot be estimated from the available data)

Gastrointestinal Disorders	*Rare:* Gastro-intestinal disturbances (e.g. nausea, vomiting, constipation, diarrhoea)
Immune System Disorders	*Rare:* Allergic reactions *Not known:* Anaphylactic reaction
Metabolism and Nutrition Disorders	*Not known*: Haemosiderosis may occur as a result of excessive or mistaken therapy.

Glycine: Potential undesirable effects may occur as a result of inappropriate use: for example, overdose or excessively fast infusion rate.

Post-marketing Adverse Reactions

The following adverse reactions have been reported with CLINIMIX formulations in the post-marketing experience, listed by MedDRA System Organ Class (SOC) and by Preferred Term

System Organ Class (SOC)	Preferred MedDRA Term	Frequency[a]
Immune system disorders	Hypersensitivity*	Not known

[a:] Frequency is defined as very common (≥ 1/10); common (≥ 1/100 to < 1/10); uncommon (≥ 1/1000 to < 1/100): rare (≥ 1/10,000 to < 1/1000); very rare (< 1/10,000); and not known (cannot be estimated from the available data).

*Includes the following manifestations: Hypotension, Hypertension, Peripheral cyanosis, Tachycardia, Dyspnoea, Vomiting, Nausea, Urticaria, Rash, Pruritus, Erythema, Hyperhidrosis, Pyrexia, Chills

Class Reactions

Other adverse reactions reported with parenteral nutrition include:

Anaphylaxis

Pulmonary vascular precipitates

Hyperglycaemia; Hyperammonemia, Azotemia

Hepatic failure, Hepatic cirrhosis, Hepatic fibrosis, Cholestasis, Hepatic steatosis, Blood bilirubin increased, Hepatic enzyme increased

Cholecystitis, Cholelithiasis

Infusion site thrombophlebitis, Venous irritation (Infusion site phlebitis, Pain, Erythema, Warmth, Swelling, Induration)

Glucose intolerance is a common metabolic complication in severely stressed patients. With the infusion of the products, hyperglycaemia, glycosuria, and hyperosmolar syndrome may occur.

Reporting of adverse reactions

If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via any point of contact of Torrent Pharma available at: https://www.torrentpharma.com/index.php/site/info/adverse_event_reporting By reporting side effects, you can help provide more information on the safety of this medicine.

4.9. Overdose

Iron: Overdose can cause iron overload which may manifest itself as haemosiderosis. Overdose should be treated, as deemed necessary by the treating physician, with an iron chelating agent or according to standard medical practice.

Folic Acid: Iron overdosage is an acute emergency requiring urgent medical attention. An acute intake of 75mg/kg of elemental iron is considered extremely dangerous in young children.

Symptoms:

Initial symptoms of iron overdosage include nausea, vomiting, diarrhoea, abdominal pain, haematemesis, rectal bleeding, lethargy and circulatory collapse. Hyperglycemia and metabolic acidosis may occur. However, if overdosage is suspected, treatment should be implemented immediately. In severe cases, after a latent phase, relapse may occur after 24-48 hours manifested by hypotension, coma, hypothermia, hepatocellular necrosis, renal failure, pulmonary oedema, diffuse vascular congestion, coagulopathy and/or convulsions. In many cases, full recovery may be complicated by long-term effects such as hepatic necrosis, toxic encephalitis, CNS damage and pyloric stenosis.

Treatment:

The following steps are recommended to minimise or prevent further absorption of the medication.

Children:

1. Administer an emetic such as syrup of ipecac.

2. Emesis should be followed by gastric lavage with desferrioxamine solution (2g/l). This should then be followed by the installation of desferroxamine 5g in 50 – 100ml water, to be retained in the stomach. Inducing diarrhoea in children may be dangerous and should not be undertaken in young children. Keep the patient under constant surveillance to detect possible aspiration of vomitus – maintain suction apparatus and standby emergency oxygen in case of need.

3. Severe poisoning:

In the presence of shock and/or coma with high serum iron levels (serum iron >90umol/l) immediate supportive measure plus IV infusion of desferrioxamine should be instituted. Desferrioxamine 1 5mg/kg body weight should be administered every hour by slow IV infusion to a maximum 80mg/kg/24 hour.

Warning:

Hypotension may occur if the infusion rate is too rapid.

4. Less severe poisoning: i.m desferroxamine 1g 4-6-hourly is recommended.

5. Serum iron levels should be monitored throughout.

Adults:

Treatment of iron overdose in pregnancy should be as for the non-pregnant patient and if clinically indicated, treatment with desferrioxamine should not be withheld.

1. Administer an emetic.

2. Gastric lavage may be necessary to remove drug already released into the stomach.

This should be undertaken using a desferrioxamine solution (2g/l).

Desferrioxamine 5g in 50-100ml water should be introduced into the stomach following gastric emptying. Keep the patients under constant surveillance to detect possible aspiration of vomitus; maintain suction apparatus and standby emergency oxygen in case of need.

3. A drink of mannitol or sorbitol should be given to induce small bowel emptying.

4. In the presence of shock and/or coma with high serum iron levels (>142umol/l) immediate supportive measures plus IV infusion of desferrioxamine should be instituted.

The recommended dose of desferrioxamine is 5mg/kg/h by a slow IV infusion up to a maximum of 80mg/kg/24 hours.

Warning:

Hypotension may occur if the infusion rate is too rapid.

5. Less severe poisoning:

i.m. deferrioxamine 50mg/kg up to a maximum dose of 4g should be given.

6. Serum iron levels should be monitored throughout.

Glycine: In the event of inappropriate administration (overdose, and/or infusion rate higher than recommended), hypervolemia, electrolyte disturbances or acidosis may occur and result in severe or fatal consequences. In such situations, the infusion must be stopped immediately. If medically appropriate, further intervention may be indicated.

Hyperglycaemia, glycosuria, and a hyperosmolar syndrome may occur with excessive glucose infusion.

A too rapid infusion of amino acid may result in nausea, vomiting and chills. In such cases, discontinue the infusion immediately.

In some serious cases, haemodialysis, haemofiltration, or haemo-dia-filtration may be necessary.

There is no specific antidote for overdose. Emergency procedures should include appropriate corrective measures, with particular attention to respiratory and cardiovascular systems.

5. Pharmacological properties

5.1. Mechanism of Action

Iron sucrose, which is the active ingredient of, is composed of a polynuclear iron(III)-hydroxide core surrounded by a large number of non-covalently bound sucrose molecules. The complex has a weight average molecular weight (Mw) of approximately 43 kDa. The polynuclear iron core has a structure similar to that of the core of the physiological iron storage protein ferritin. The complex is designed to provide, in a controlled manner, utilisable iron for the iron transport and storage proteins in the body (i.e., transferrin and ferritin, respectively).

Following administration, the polynuclear iron core from the complex is taken up predominantly by the reticuloendothelial system in the liver, spleen, and bone marrow. In a second step, the iron is used for the synthesis of HB, myoglobin and other iron-containing enzymes, or stored primarily in the liver in the form of ferritin.

5.2. Pharmacodynamic properties

Iron: Pharmacotherapeutic group: Anti-anaemic preparation, iron, parenteral preparation, ATC code: B03AC

Clinical efficacy and safety

Chronic kidney disease

Study LU98001 was a single arm study to investigate the efficacy and safety of 100 mg iron as It for up to 10 sessions over 3-4 weeks in haemodialysis patients with iron deficiency anaemia (HB >8 and <11.0 g/dl, TSAT <20%, and serum ferritin ≤300 µg/l) who were receiving rHuEPO therapy. A HB ≥11 g/dl was attained in 60/77 patients. The mean increase in serum ferritin and TSAT was significant from baseline to the end of treatment (Day 24) as well as to the 2 and 5 weeks follow-up visit.

Study 1VEN03027 was a randomised study comparing It (1000 mg in divided doses over 14 days) and oral ferrous sulphate (325 mg 3 times daily for 56 days) in non-dialysis dependent chronic kidney disease patients (HB ≤11.0 g/dl, serum ferritin ≤300 µg/l, and TSAT ≤25%) with or without rHuEPO. A clinical response (defined as HB increase ≥1.0 g/dl and serum ferritin increase ≥160 µg/l) was more frequently observed in patients treated with It (31/79; 39.2%) compared to oral iron (1/82; 1.2%); p<0.0001.

Inflammatory Bowel Disease

A randomised, controlled study compared It (single IV dose of 200 mg iron once per week or every second week until the cumulative dose was reached) with oral iron (200 mg twice daily for 20 weeks) in patients with inflammatory bowel disease and anaemia (HB <11.5 g/dl). At the end of treatment, 66% of patients in the It group had an increase in HB ≥2.0 g/dl compared to 47% in the oral iron group (p=0.07).

Postpartum

A randomised, controlled trial in women with postpartum iron deficiency anaemia (HB <9 g/dl and serum ferritin <15 µg/l at 24–48 hours post-delivery) compared 2 × 200 mg iron given as It on Days 2 and 4 (n=22) and 200 mg of oral iron given as ferrous sulphate twice daily for 6 weeks (n=21). The mean increase in HB from baseline to Day 5 was 2.5 g/dl in the It group and 0.7 g/dl in the oral iron group (p<0.01).

Pregnancy

In a randomised, controlled study, women in their third trimester of pregnancy with iron deficiency anaemia (HB 8 to 10.5 g/dl and serum ferritin <13 µg/l) were randomised to It (individually calculated total dose of iron administered over 5 days) or oral iron polymaltose complex (100 mg 3× daily until delivery). The increase in HB from baseline was significantly greater in the It group compared to the oral iron group at Day 28 and at delivery ($p<0.01$).

Folic Acid:

Clinical efficacy and safety

A daily dose of 100mg of iron and 200-500 micrograms of folic acid is recommended for the prevention of iron and folic acid deficiencies during pregnancy. FA contains 305mg ferrous fumarate, equivalent to 100mg of elemental iron, and 350 micrograms of folic acid, and thus one tablet daily provides a suitable prophylactic dose.

Glycine: Pharmacotherapeutic group: Solutions for parental nutrition / mixtures

As a parenteral nutrition intravenous fluid and tablet provides nutritional support to maintain the complex nitrogen-energy balance which may be altered by nutritional depletion and trauma. Tablet provide a biologically available source of nitrogen (L-amino acids), carbohydrates (as glucose) and electrolytes.

5.3. Pharmacokinetic properties

Iron:

Distribution

The ferro kinetics of iron sucrose labelled with ^{52}Fe and ^{59}Fe were assessed in 6 patients with anaemia and chronic renal failure. In the first 6–8 hours, ^{52}Fe was taken up by the liver, spleen and bone marrow. The radioactive uptake by the macrophage-rich spleen is considered to be representative of the reticuloendothelial iron uptake.

Following intravenous injection of a single 100 mg iron dose of iron sucrose in healthy volunteers, maximum total serum iron concentrations were attained 10 minutes after injection and had an average concentration of 538 µmol/l. The volume of distribution of the central compartment corresponded well to the volume of plasma (approximately 3 litres).

Biotransformation

Upon injection, sucrose largely dissociates and the polynuclear iron core is mainly taken up by the reticuloendothelial system of the liver, spleen, and bone marrow. At 4 weeks after administration, red cell iron utilization ranged from 59 to 97%.

Elimination

The iron sucrose complex has a weight average molecular weight (Mw) of approximately 43 kDa, which is sufficiently large to prevent renal elimination. Renal elimination of iron, occurring in the first 4 hours after injection of a It dose of 100 mg iron, corresponded to less than 5% of the dose.

After 24 hours, the total serum iron concentration was reduced to the pre-dose level. Renal elimination of sucrose was about 75% of the administered dose.

Folic Acid:

Absorption

Folic acid is rapidly absorbed, mainly from the proximal part of the small intestine. Iron is irregularly and incompletely absorbed from the gastro-intestinal tract, the main site of absorption being the duodenum and jejunum. Absorption is aided by the acid secretion of the stomach or by dietary acids and is more readily affected when the iron is in the ferrous state. Absorption is also increased in conditions of iron deficiency or in the fasting state but is decreased if body stores are overloaded.

Glycine: The amino acids, electrolytes and glucose of that are distributed, metabolised and excreted in an identical manner typical to the separate amino acids, glucose and electrolytes intravenous solutions

6. Nonclinical properties

6.1. Animal Toxicology or Pharmacology

Iron: Non-clinical data reveal no special hazard for humans based on conventional studies of repeated dose toxicity, genotoxicity and toxicity to reproduction and development.

Folic Acid:

Glycine: No preclinical studies with glycine have been performed.

Preclinical studies performed using the solutions of amino acids and glucose contained in this of different qualitative compositions and concentrations have not, however, revealed any specific toxicity.

7. Description

Iron (Ferric Pyrophosphate) With Vitamin C, Vitamin B12, Folic Acid, Glycine Tablet are pinkish-red in colour. The ingredients used are Diluent (Maltodextrin), Ferric Pyrophosphate, Diluent (lactose Monohydrate), Bulking Agent [INS 460 (i)], L – Ascorbic Acid, Disintegrant (INS 468), Binder (INS 1201), Disintegrant (Sodium Starch Glycolate), Coating Agent (Hydroxy propyl methyl cellulose), Glycine, Vehicle (Polyethylene glycol), Anticaking agent (Magnesium Aluminometasilicate), Antisticking Agent [INS 470(iii)], Synthetic Colour (INS 124), Glidant [INS 553(iii)] Coating agent (Ethyl Celluose), Colour (INS 171), Emulsifier [INS 322(i)], n-pteroyl glutamic acid Cyanocobalamin.

Allergen: Contains Milk, may contain Soy and Nuts

8. Pharmaceutical particulars

8.1. Incompatibilities

Not applicable

8.2. Shelf-life

Best before eighteen months from manufacturing.

8.3. Packaging information

NEW REDULID HB is available in Blister strips of 15 tablets.

Warning: Not recommended for lactose intolerant people

NOT FOR PARENTERAL USE.

Allergen: Contains Milk, may contain Soy and Nuts

8.4. Storage and handing instructions

Store in a dry place at temperature not exceeding 25^{o}C, Protect from direct sunlight

9. Patient Counselling Information

Ask the patients to inform the treating physicians in case of any of the below:

- Have any allergies
- Have kidney or liver problems
- Are pregnant or plan to become pregnant
- Are breastfeeding or plan to breastfeed
- Have any serious illness
- Are taking any medicines (prescription, over-the-counter, vitamins, or herbal products)

10. Details of manufacturer

Manufactured in India by:

Tirupati Lifesciences Private Limited.

Nahan Road, Paonta Sahib, Distt. Sirmaur (H.P.) - 173 205, INDIA.

11. Details of permission or licence number with date

FSSAI Lic. No. 10012062000165 issued on 19.07.2019

12. Date of revision

APR 2025

MARKETED BY

TORRENT PHARMACEUTICALS LTD.

Indrad-382 721, Dist. Mehsana, INDIA

IN/NEW REDULID HB/APR-2025/02/PI