Baxter

Regiocit

Sodium Chloride and Sodium Citrate Solution
CRRT REPLACEMENT SOLUTION

REGIOCIT

For hemofiltration and regional citrate anticoagulation (RCA) during continuous renal replacement therapy (CRRT)

Regiocit has been authorized by FDA for emergency use.

Regiocit is not FDA-approved.

Regiocit has been authorized only for the duration of the declaration that circumstances exist justifying the authorization of the emergency use of **Regiocit** under section 564(b)(1) of the Act, 21 U.S.C. § 360bbb-3(b)(1), unless the authorization is terminated or revoked sooner.

REGIOCIT
Sodium Chloride 5.03 g/L, Sodium Citrate 5.29 g/L

Brief Summary of Prescribing Information. See Package Insert for Full Prescribing Information.

INDICATIONS

REGIOCIT (sodium chloride and sodium citrate) solution is indicated for use as replacement solution for regional citrate anticoagulation (RCA) of the extracorporeal circuit in patients treated with continuous renal replacement therapy (CRRT), particularly when systemic anticoagulation with heparin is contraindicated, e.g., in patients with increased bleeding risks.

REGIOCIT should be administered only under the supervision of a physician experienced in the use of CRRT.

Pediatrics (< 18 years of age): No data are available to Health Canada; therefore, Health Canada has not authorized an indication for pediatric use.

Geriatrics (> 65 years of age): Evidence from clinical studies and experience suggests that use in the geriatric population is not associated with differences in safety or effectiveness.

CONTRAINDICATIONS

REGIOCIT solution is contraindicated in:

- patients who are hypersensitive to this drug or to any ingredient in the formulation, including any non-medicinal ingredient, or component of the container. For a complete listing, see Dosage Forms, Strengths, Composition and Packaging.
- severe liver failure
- shock with muscle hypoperfusion

DOSAGE FORMS, STRENGTHS, COMPOSITION AND PACKAGING

Table 1 – Dosage Forms, Strengths, Composition and Packaging

Route of Administration	Dosage Form / Strength / Composition	Non-medicinal Ingredients
Extracorporeal	Sodium chloride 5.03 g / L, sodium citrate 5.29 g / L solution for hemofiltration and regional citrate anticoagulation (RCA)	Hydrochloric acid, water

Table 2 – Electrolyte Concentrations from the Medicinal Ingredients

Component	mmol / L
Citrate, $C_6H_5O_7^{3-}$	18
Sodium, Na^+	140
Chloride, Cl^-	86

REGIOCIT (sodium chloride and sodium citrate) solution is available in a 5 000 mL bag, with a luer connector valve and a spike connector. The bag is made of a multilayer film containing polyolefins and elastomers. This product is not made with natural rubber latex.

WARNINGS AND PRECAUTIONS

There have been reports of system failure due to apparent operator error during administration of CRRT with REGIOCIT solution, leading to serious adverse events, including life-threatening hypocalcemia. Plasma electrolyte and acid-base parameters should be closely monitored during CRRT, and appropriate action taken if imbalances of electrolytes or acid-base balance are detected. Instructions for use of REGIOCIT and CRRT must be strictly followed.

Cautionary statements are provided in WARNINGS AND PRECAUTIONS, Endocrine and Metabolism, Hematologic, Hepatic / Biliary / Pancreatic, and Monitoring and Laboratory Tests, and in DRUG INTERACTIONS to avoid the following when performing the CRRT procedure:

- Hypercalcemia
- Hyponatremia
- Fluid retention, dehydration
- Nausea, vomiting
- Muscle spasms

Citrate Accumulation

Special attention is required in patients with liver failure, including hepatic cirrhosis or acute hepatic failure, or in shock, since metabolism of citrate may be markedly reduced and patients may be thus exposed to citrate accumulation. In these circumstances, more frequent monitoring of citrate accumulation should be undertaken. With systemic citrate accumulation, metabolic acidosis and ionized hypocalcemia may ensue, and the ratio of total to ionized calcium in the blood rises. If total/ionized calcium ratio rises above 2.3, REGIOCIT infusion should be reduced or stopped. CRRT may then be continued without anticoagulation, or by using other means of anticoagulation.

REGIOCIT is contraindicated in patients with severe hepatic impairment or in circulatory shock with muscle hypoperfusion (see Package Insert, CONTRAINDICATIONS).

Excessive infusion of citrate can lead to acute hypocalcemia and metabolic alkalosis, with neurologic and cardiac complications. Treatment consists of discontinuation of the citrate infusion and infusion of calcium.

Endocrine and Metabolism

Hypocalcemia

REGIOCIT solution contains no calcium, and may lead to systemic ionized hypocalcemia, due to loss of calcium bound to citrate in the effluent and/or in the case of systemic citrate accumulation (see Package Insert, DOSAGE AND ADMINISTRATION).

Electrolyte and Acid–Base Balance

REGIOCIT solution contains citrate, which can influence the patient's electrolyte and acid–base balance. Plasma electrolyte and acid–base parameters should be closely monitored during CRRT. Closely monitor sodium, magnesium, potassium, phosphate, and calcium. Infusion of electrolytes may be needed to supplement any loss.

Hypercalcemia

Medicinal products containing calcium used for maintenance of calcium homeostasis in CRRT patients can increase the risk of hypercalcemia, and can result in a reduced anticoagulation effect. Care should be taken to avoid excessive titration in administering calcium as this can lead to hypercalcemia. Frequent monitoring of pH, electrolytes, total-to-ionized calcium ratio, and systemic ionized calcium is important to avoid electrolyte and/or acid-base imbalance.

Hypomagnesemia

REGIOCIT solution contains no magnesium. Use of the REGIOCIT solution may result in hypomagnesemia due to CRRT effluent losses (see Package Insert, DOSAGE AND ADMINISTRATION).

Hypoglycemia

REGIOCIT solution contains no dextrose. Administration of REGIOCIT solution may lead to hypoglycemia. Blood glucose levels should be monitored regularly.

Hypokalemia

REGIOCIT solution contains no potassium. The serum potassium concentration must be monitored before and during CRRT.

Metabolic Alkalosis

REGIOCIT solution contains citrate, which contributes to the overall buffer load. Additional sodium bicarbonate (or buffer source) contained in the CRRT fluids or in other fluids administered during therapy may increase the risk of metabolic alkalosis. Metabolic alkalosis may occur if the net citrate administration rate exceeds that which is necessary to maintain acid–base balance.

If metabolic alkalosis occurs, decrease the citrate dose, and/or increase the dialysate flow rate or change the composition of the CRRT solution.

Blood calcium levels, pH and bicarbonate should be monitored regularly in patients with metabolic alkalosis since this condition may potentiate hypocalcemia.

Metabolic Acidosis

Metabolic acidosis may occur if metabolic clearance of citrate by the liver or skeletal muscle is impaired (see Package Insert, CONTRAINDICATIONS).

If citrate accumulation develops and/or metabolic acidosis develops or worsens during therapy with REGIOCIT, the infusion rate may need to be decreased or its administration stopped.

Hypo-osmolarity/Hypotonicity

REGIOCIT solution is hypo-osmolar/hypotonic relative to standard CRRT replacement fluids and should be used with caution in patients with traumatic brain injury, cerebral edema, or increased intracranial pressure.

Instructions for use of REGIOCIT must be strictly followed. Incorrect use of the access ports or other restrictions to fluid flow may lead to incorrect patient weight loss and may result in machine alarms being set off. Continuing treatment without resolving the originating cause may lead to patient injury or death.

Careful ongoing assessment is required of all solutions infused during REGIOCIT administration, whether related to CRRT dialysis fluids or to other solutions infused systemically.

REGIOCIT has a physiological sodium level of 140 mmol/L. However, sodium losses occurring during CRRT must be balanced as part of overall fluid and electrolyte management to avoid a drop in blood sodium level leading to systemic hyponatremia.

Hematologic

Hemodynamic Status and Fluid Balance

The patient's hematocrit, hemodynamic status and fluid balance should be monitored throughout the procedure.

- In case of hypervolemia, the net ultrafiltration rate prescribed for the CRRT device can be increased, and/or the rate of administration of solutions other than replacement fluid and/or dialysate can be reduced.
- In case of hypovolemia, the net ultrafiltration rate prescribed for the CRRT device can be reduced, and/or the rate of administration of solutions other than replacement fluid and/or dialysate can be increased.

Hepatic / Biliary / Pancreatic

Use in Patients with Mild to Moderate Hepatic Impairment

Systemic metabolism of citrate to bicarbonate may be impaired in patients with hepatic impairment, resulting in accumulation of citrate. If REGIOCIT solution is administered to patients with mild to moderate hepatic impairment, frequent monitoring of pH, electrolytes, total-to-ionized calcium ratio, and systemic ionized calcium is important to avoid electrolyte and/or acid–base imbalance (see Package Insert, CONTRAINDICATIONS).

Monitoring and Laboratory Tests

Plasma electrolyte and acid–base parameters should be closely monitored during CRRT. Closely monitor sodium, magnesium, potassium, phosphate, calcium, blood glucose levels, hematocrit, hemodynamic status and fluid balance, pH, bicarbonate, total-to-ionized calcium ratio, and systemic ionized calcium. Infusion of electrolytes may be needed to supplement any loss.

Pregnant Women

There are no adequate data from the use of REGIOCIT solution in pregnant women.

Physicians should carefully consider the potential risks and benefits for each specific patient before administering REGIOCIT solution.

Breast-feeding

There are no adequate data from the use of REGIOCIT solution in lactating women.

Physicians should carefully consider the potential risks and benefits for each specific patient before administering REGIOCIT solution.

It is unknown if the drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised.

For More Information:

Please visit www.baxterpi.com for Full Prescribing Information.

Baxter Healthcare Corporation
One Baxter Parkway
Deerfield, IL 60015

www.baxter.com

USMP/SG152/20-0001 09/20