



Harmonized

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Authorized to

- Critical Care Nurses trained in Continuous Renal Replacement Therapy (CRRT) at Lakeridge Health

Patient Population Description

- Critical care patients receiving CRRT using the *CRRT Using Low Concentration 18/0 Citrate Solution and The Prismaflex System Order Set*.

Contraindications to Implementing the Protocol

- Patients less than 16 years of age
- Patient unwilling or unable to provide a blood sample for bedside or laboratory testing
- Refusal of patient/family consent for treatment; notify Most Responsible Practitioner (MRP) immediately.

Protocol Description

Upon receipt of an order for CRRT Calcium Chloride Solution Infusion Protocol the authorized implementer will:

- Use the pre-mixed 50 mL syringe of 10% calcium chloride solution
- Draw initial **Systemic** ionized calcium (iCa-PatientCRRT) from an arterial line or peripheral venous sample 1 hour after the start of infusion and follow nomogram in Table 1
- If CRRT Blood Flow Rate (BFR) is changed, recheck **Systemic** ionized calcium (iCa-PatientCRRT) from an arterial line or peripheral venous sample 1 hour after the BFR change and follow the nomogram in Table 1
- Notify nephrologist of calcium compensation less than 60% or greater than 150%
- Repeat post-filter ionized calcium (blue port) and patient's ionized calcium (from arterial line or peripheral venous sample) every 1 hour until there are no CRRT fluid flow rate (calcium chloride infusion rate, low dose citrate infusion rate, blood flow rate, dialysate flow rate or replacement solution flow rate) changes for 2 consecutive hours. If there are no CRRT fluids flow rate changes for 2 consecutive hours, repeat this lab work q6H (can coordinate timing with usual q12H CRRT bloodwork). If there are no CRRT fluid flow rate changes for 24 consecutive hours, repeat this lab work q12H (can coordinate timing with usual q12H CRRT bloodwork)

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Table 1: Nomogram to maintain patient’s blood ionized Calcium between 1 - 1.35 mmol/L

Patient’s Ionized Calcium	Calcium Chloride Bolus and Rate Change	Repeat Ionized Calcium
Less than 0.75 mmol/L	Give 3 g calcium chloride (1 g in 100 mL NaCl over an hour x3) and increase calcium compensation by 30%	1 hour after calcium boluses completed
0.76 - 0.85 mmol/L	Give 2 g calcium chloride (1 g in 100 mL NaCl over an hour x2) and increase calcium compensation by 20%	1 hour after calcium boluses completed
0.86 - 0.90 mmol/L	Give 1 g calcium chloride (1 g in 100 mL NaCl over an hour) and increase calcium compensation by 10%	1 hour after calcium bolus completed
0.91 – 0.99 mmol/L	- If post-filter ionized calcium below target then no change - If post-filter ionized calcium at or above target then increase calcium compensation by 5%	In 1 hour
1 - 1.35 mmol/L	No change	
1.36 – 1.45 mmol/L	Decrease calcium compensation by 5%	In 1 hour
Greater than 1.45 mmol/L	Decrease calcium compensation by 10%	In 1 hour

Review/Evaluation Process

Every 2 years

Related Documents

- CRRT Low Concentration 18/0 Citrate Solution Infusion Protocol
- CRRT Magnesium Protocol
- CRRT Using Low Concentration 18/0 Citrate Solution and The Prismaflex System Order Set