



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 PrismOCAL B22 or PrismOCAL Solution as dialysate and 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 Low Concentration 18/0 Citrate Solution Infusion Protocol the authorized implementer will:

- Administer low concentration 18/0 citrate solution via pre blood pump on Prismaflex machine
- Draw initial post-filter ionized calcium (blue port; iCa-FilterCRRT) 1 hour after start of infusion and follow the nomogram in [Table 1](#)
- If CRRT Blood Flow Rate (BFR) is changed, recheck **Post-Filter** ionized calcium (blue port; iCa-FilterCRRT) 1 hour after the BFR change and follow nomogram
- Notify Nephrologist if target citrate concentration greater than 4.5 mmol/L
- 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).

Table 1: Nomogram to maintain post-filter ionized calcium (blue port) between 0.25-0.45 mmol/L

Post-Filter Ionized Ca⁺⁺	Target Citrate Concentration Change	Repeat Post-Filter Ionized Ca⁺⁺
Less than 0.15 mmol/L	Decrease by 0.3 mmol/L and check the system for set-up flaws	In 1 hour
0.15 – 0.19 mmol/L	Decrease by 0.2 mmol/L	In 1 hour
0.20 – 0.24 mmol/L	Decrease by 0.1 mmol/L	In 1 hour
0.25 - 0.45 mmol/L	No change	
0.46 - 0.50 mmol/L	Increase by 0.1 mmol/L	In 1 hour
0.51 - 0.55 mmol/L	Increase by 0.2 mmol/L	In 1 hour
Greater than 0.55 mmol/L	Increase by 0.3 mmol/L and check the system for set-up flaws	In 1 hour

Review/Evaluation Process

Every 2 years

Related Documents

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