Entering CRRT Orders in Power Chart Citrate Anticoagulation

Use these orders for regional filter anticoagulation with citrate.

Citrate is administered as the predilution hemofiltration fluid via the PBP pump. The citrate infusion is titrated to achieve a low post filter ionized calcium. The citrate is reversed with a calcium chloride infusion that is titrated to achieve a normal systemic ionized calcium. It is used when systemic anticoagulation is contraindicated and filter patency cannot be maintained with the No Anticoagulation prescription for > 12 hours after ruling out access problems.

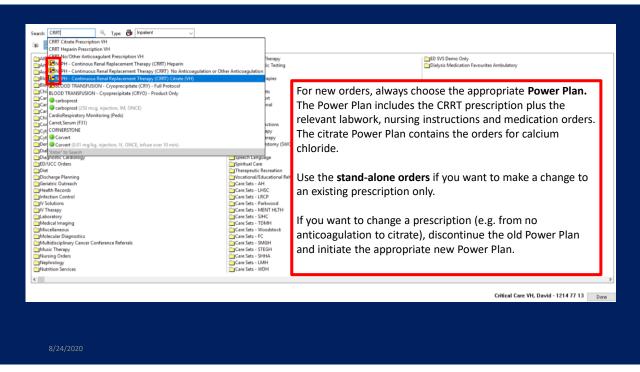
A separate central venous line is required for the administration calcium chloride. The calcium chloride infusion is titrated to the ionized calcium level drawn from an arterial line.

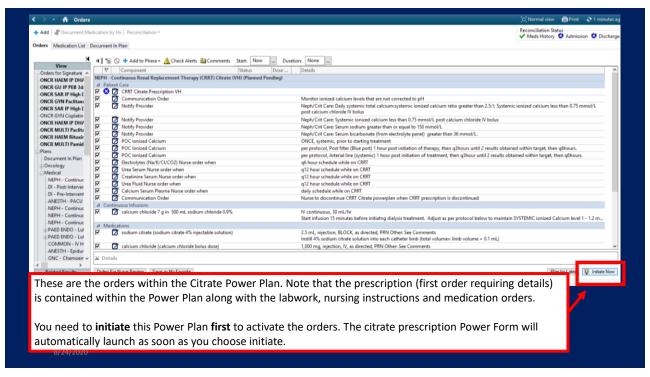
Citrate is contraindicated in severe liver failure. CRRT is usually successfully delivered with No Anticoagulation in liver failure. Liver function and signs of citrate toxicity should be monitored closely during Citrate. It should be used with caution in profound shock where clearance may be impaired. Citrate should be delayed or avoided until serum sodium levels are >130 and < 150 mmol/L to avoid rapid sodium change. Heparin or No Anticoagulation protocols are recommended when sodium levels are abnormal.

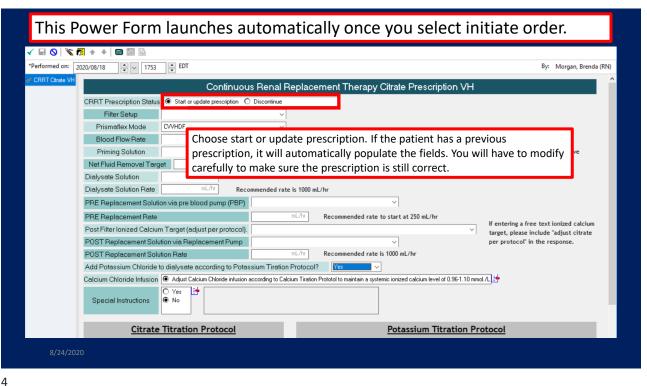
Citrate may cause hypernatremia or acid-base disturbances (most frequently metabolic alkalosis, acidosis may be associated with citrate toxicity). The use of hemodialysis fluid can mitigate some electrolyte disturbances, however, close monitoring of all electrolytes including ionized calcium is required. Hypocalcemia and associated cardiac arrhythmias can develop due to increased calcium removal, inadequate replacement or citrate toxicity. Citrate can also chelate magnesium, however, magnesium is somewhat protected because the dialysate contains magnesium.

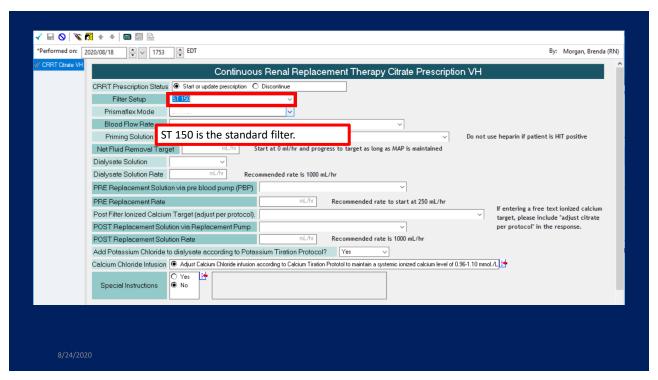
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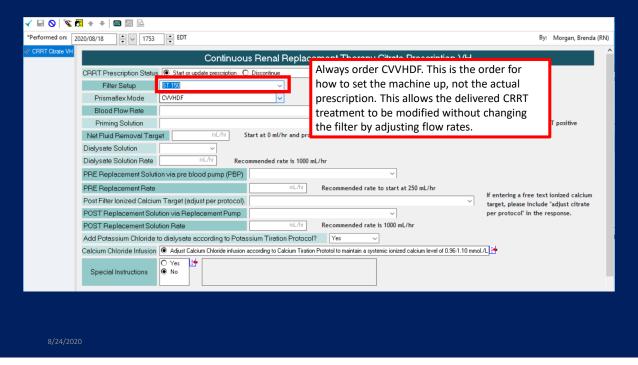
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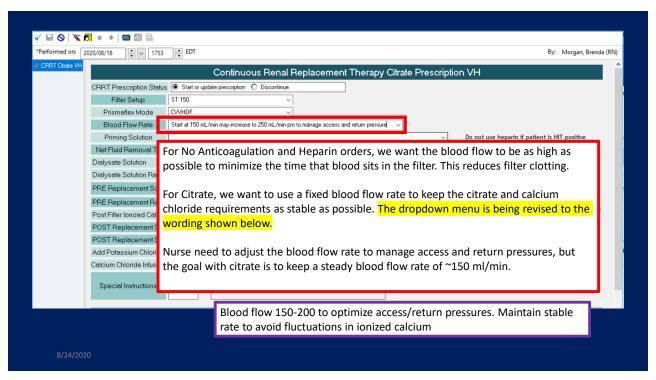


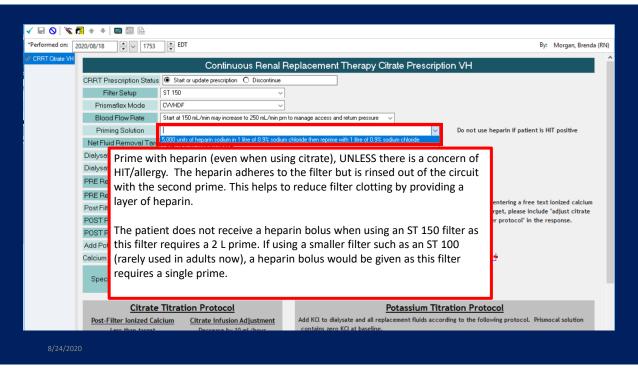


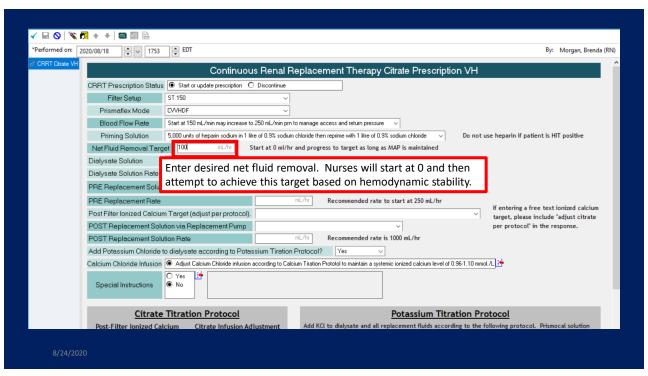


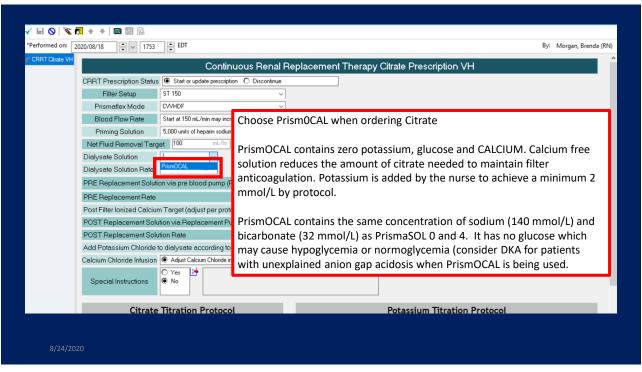


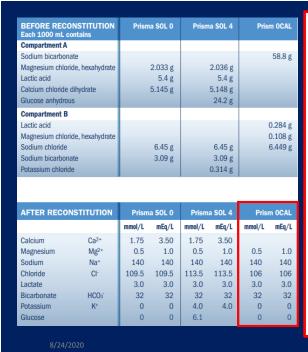












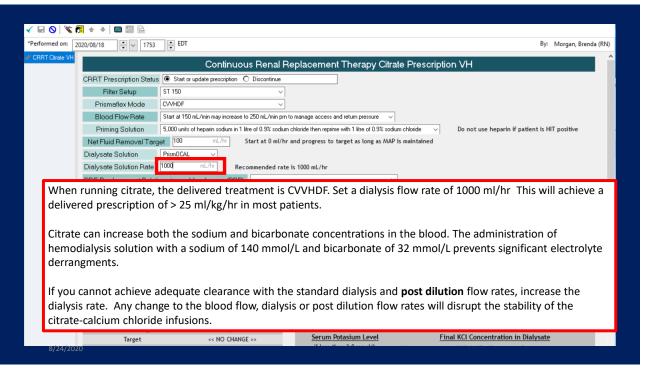
These are the 3 solutions that are stocked in CCTC. Prism OCAL is a calcium free product used only with citrate.

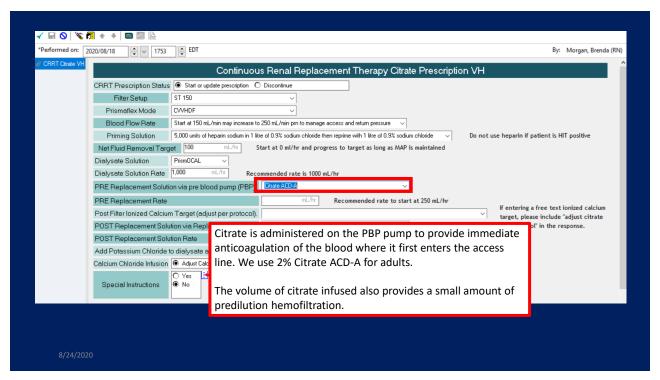
Note that all 3 solutions contain the same final concentration of bicarbonate and sodium. They all contain 3 mmol/L of lactate which is added for pH adjustment; the lactate is metabolized to bicarbonate. Potassium is added by the nurse to achieve a minimum concentration of 2 mmol/L by protocol.

Each 5 L bag is divided into 2 compartments (250 mL in the upper and 4750 mL in the lower compartments). These must be mixed together at the time the solution is hung (stability is only 24 hours once mixed).

Refer to the "AFTER RECONSTITUTION" for the final concentration of electrolytes.

Failure to break the seal between the bags will change the concentration to that of the lower compartment only. The bag will also run dry, potentially drawing air into the circuit and causing multiple alarms (the machine will identify the 5 L bag but only 4750 mL is accessible).





Na (mmol/l) Cl (mmol/l) 420 224 140/86 Citrate (mmol/l) 136 113 18 Citric Acid (mmol/l) 0 38.1 0 Dextrose (g/L) 24.5 0	Components	4% TSC Tri-sodium citrate	2.2% ACDA Anticoagulant Citrate Dextrose Solution-Formula A	0.5% Low concentration citrate solution
Citric Acid (mmol/l) 0 38.1 0	Na (mmol/l) Cl (mmol/l)	420	224	140/86
	Citrate (mmol/l)	136	113	18
Dextrose (g/L) 24.5 0	Citric Acid (mmol/l)	0	38.1	0
	Dextrose (g/L)		24.5	0
Bag Size (ml) 500 & 1000 5000	Bag Size (ml)		1000	5000

