Safe, effective, simple
Regional citrate anticoagulation during CRRT

Prismocitrate® 18/0 anticoagulant solution
Prism0cal® B22 dialysis solution
Leveraging on experience to improve therapy

Clinical use of dilute citrate solutions makes treatment safe, effective and simple.¹⁶

Over the past decade, Gambro has partnered with the medical community to develop safe solutions for regional citrate anticoagulation (RCA) in continuous renal replacement therapy (CRRT).

One of the key findings is the advantages of dilute citrate solutions over concentrated solutions. While the original descriptions of citrate anticoagulation in CRRT used concentrated solutions (ACD-A, 4% TSC), these protocols required pharmacy-made, hypotonic solutions and complex monitoring, and have been associated with serious adverse events.⁷⁻⁹

In contrast, the clinical use of dilute citrate solutions provides a simpler and safer alternative for RCA during CRRT.¹⁴

Introducing new solutions for regional citrate anticoagulation

<table>
<thead>
<tr>
<th>Prismocitrate 18/0 anticoagulant solution</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Citrate</td>
<td>18 mmol/l</td>
</tr>
<tr>
<td>Sodium</td>
<td>140 mmol/l</td>
</tr>
<tr>
<td>Chloride</td>
<td>86 mmol/l</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prism0cal B22 dialysis solution</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicarbonate</td>
<td>22 mmol/l</td>
</tr>
<tr>
<td>Lactate</td>
<td>3 mmol/l</td>
</tr>
<tr>
<td>Sodium</td>
<td>140 mmol/l</td>
</tr>
<tr>
<td>Potassium</td>
<td>4 mmol/l</td>
</tr>
<tr>
<td>Calcium</td>
<td>0 mmol/l</td>
</tr>
<tr>
<td>Magnesium</td>
<td>0.75 mmol/l</td>
</tr>
<tr>
<td>Chloride</td>
<td>120.5 mmol/l</td>
</tr>
<tr>
<td>Glucose</td>
<td>6.1 mmol/l</td>
</tr>
</tbody>
</table>
Safe

- Low risk of adverse events, such as hypernatremia or alkalosis, which are often reported when using high concentrated citrate solutions.1–6
- Safe management of acid-base balance through bicarbonate-buffered, calcium-free dialysate with key electrolytes at physiological concentrations.2,4
- Low risk of metabolic complications in case solutions are inadvertently interchanged.

Effective

- Optimal anticoagulation. Prismocitrate 18/0 solution easily provides the blood citrate concentration needed to effectively lower ionized calcium level in the circuit and inhibit coagulation.
- Improved treatment quality. Longer circuit patency with citrate yields reduced treatment downtime, higher cumulative dose and thus improved treatment quality. This property ensures that each patient receives the prescription of fluid exchange prescribed.
- Easy achievement of targets. The fluid and electrolyte balance is achieved predominantly by the addition of concomitant dialysate and/or post replacement fluid at a rate to achieve either a weight-based dose or a specific end-point such as the normalization of acid-base status.

Simple

- Pre-formulated. Literature reports multiple citrate protocols, some quite complex requiring pharmacy-made fluids. With pre-formulated solutions from Gambro, citrate protocols become much simpler and could be standardized.
- Easier citrate implementation. Prismocitrate 18/0 solution with the Prismaflex eXeed™ II system significantly simplifies the implementation of citrate protocols. The system allows convective and diffusive therapies with fully integrated citrate management and calcium substitution to the patient.
Simple implementation with the Prismaflex eXeed™ II system

Typical set-up for regional citrate anticoagulation
Citrate dose: 3 mmol/l
Suggested CRRT dose: 35 ml/kg/h

References

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