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### **Saline Delivery During Hemodialysis: Efficacy of Bolus Rinse Versus Continuous Infusion for Anticoagulation**

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#### **Background**

Patients receiving hemodialysis are at risk of circuit clotting during treatment which may lead to delay in patient care, potential patient blood loss, or physical loss of the circuit. Although heparin is used to prevent clotting in the hemodialysis circuit, some patients cannot be safely exposed to heparin especially in the acute care setting. Two methods of saline delivery are available to assist with anticoagulation, bolus rinse and continuous infusion.

#### **Purpose**

The purpose of this study is to determine if there is a difference in the effectiveness of two methods of saline delivery in preventing clotting by reviewing observation of clots, severity of clots, and early termination of hemodialysis.

#### **Method**

Randomized cross-over design was used. Patients receiving hemodialysis without heparin or systemic anticoagulation were consented. The participants were then randomized to receive one of the two methods of saline delivery with their dialysis treatment, and the alternate method on the following treatment. The primary outcome is observation and severity of clots during the procedure.

#### **Results**

Paired data were collected on 42 patients (age 52 +/- 13 years, 24 males). Patients received both methods of saline delivery in random order. There was no significant difference in the patient's physiologic status, dialysis prescription, or hemodialysis outcomes. There was an increased trend ( $p=0.058$ ) in medium and large clots observed in the venous chamber of the dialysis circuit when saline bolus rinse was used.

#### **Conclusions**

Both methods of saline delivery may prevent clotting of the hemodialysis circuit. Considerations for nursing time, cost of supplies, and accuracy in intake/output measurements may influence the selection of one method of saline delivery over another. Further research in multiple acute care settings or chronic dialysis centers with a larger sample size may be beneficial.

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