



Hospital Pharmacy Journal Club

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Key Controversies in Colloid and Crystalloid Fluid Utilization

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Suggested Journal Club Members:

Pharmacy Directors, Critical Care Coordinators,
Critical Care Pharmacists, Residents

Summary:

Nearly 2 centuries have passed since the use of intravenous fluid became a foundational component of clinical practice. Despite a steady stream of published investigations on the topic, questions surrounding the choice, dose, timing, targets, and cost-effectiveness of various fluid options remain insufficiently answered. In recent years, 2 of the most debated topics reference the role of albumin in acute care and the safety of normal saline. Although albumin has a place in therapy for specific patient populations, its high cost relative to other fluids makes it a less desirable option for hospitals and health systems with escalating formulary scrutiny. Pharmacists bear responsibility for reconciling this disparity and supporting the rational use of albumin in acute care through a careful evaluation of recently published literature.

1. Briefly outline the design and findings of the landmark Saline versus Albumin Fluid Evaluation (SAFE) trial including the results in subgroups of patients with sepsis and traumatic brain injury.

2. Differentiate balanced salt solutions from normal saline
3. Describe concerns that have been raised about the adverse effects of hyperchloremia.
4. Characterize the level of evidence behind clinical comparisons among isotonic crystalloids.
5. What does the evidence suggest about crystalloid fluid selection in individuals with renal dysfunction undergoing kidney transplantation?
6. According to the 2012 Surviving Sepsis Campaign Guidelines, when should albumin be utilized for fluid resuscitation in the setting of sepsis?
7. Explain the difference between albumin resuscitation and albumin supplementation in critically ill patients.
8. Briefly outline the intervention and findings from the ALBIOS trial.
9. What limitations exist in the clinical trials that have analyzed the impact of albumin supplementation in critically ill patients?
10. In what indications/scenarios would there be strong evidence to administer albumin in critically ill patients?