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Fluid Resuscitation - Plasma Lyte A Vs 0.9 percent normal saline for Laparotomy in Acute Gastrointestinal perforation

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ABSTRACT

BACKGROUND

Acute gastrointestinal perforation is a surgical emergency commonly associated with severe sepsis, electrolyte imbalance, and hemodynamic instability. Appropriate perioperative fluid resuscitation is crucial for optimizing tissue perfusion and improving postoperative outcomes. While 0.9% normal saline (NS) has traditionally been used, its high chloride content may contribute to hyperchloremic metabolic acidosis. Balanced crystalloids such as Plasma-Lyte A offer a more physiological electrolyte composition and may provide superior biochemical andq clinical outcomes.

AIM

To compare the efficacy and safety of Plasma-Lyte A versus 0.9% normal saline for intraoperative fluid resuscitation in patients undergoing laparotomy for acute gastrointestinal perforation.

METHODS :

A prospective, comparative clinical study was conducted on patients undergoing emergency laparotomy for gastrointestinal perforation. Participants were allocated to receive either Plasma-Lyte A or 0.9% normal saline for intraoperative resuscitation. Hemodynamic parameters, acid–base status, serum electrolytes, urine output, and postoperative complications were recorded. Outcomes were compared between the two groups using appropriate statistical tests.

RESULTS :

Patients receiving Plasma-Lyte A demonstrated more stable acid–base profiles, with significantly lower incidence of hyperchloremic metabolic acidosis compared to the normal saline group. Hemodynamic stability and urine output were better maintained in the Plasma-Lyte A group. Postoperative renal function markers showed a favorable trend with balanced crystalloids, while overall complication rates were lower relative to the normal saline group.

CONCLUSION:

Plasma-Lyte A appears to offer superior biochemical stability and improved perioperative outcomes compared to 0.9% normal saline in patients undergoing laparotomy for acute gastrointestinal perforation. Balanced crystalloids may therefore be a more optimal choice for intraoperative fluid resuscitation in this high-risk surgical population.

KEYWORDS: Plasma Lyte A , 0.9 percent normal saline , Laprotomy , Gastrointestinal Perforation.