

Efficacy of Goal-Directed Fluid Therapy via Pleth Variability Index During Laparoscopic Roux-en-Y Gastric Bypass Surgery in Morbidly Obese Patients.

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BACKGROUND: There is no well-recognized guideline for intraoperative fluid management in bariatric surgery. Goal-directed fluid therapy (GDFT) is a new concept of perioperative fluid management which was shown to improve patients' prognoses. Dynamic indicators may better predict fluid response compared to static indicators. In this study, we aimed to assess effects of administering GDFT protocol via Pleth Variability Index (PVI) in morbidly obese patients undergoing laparoscopic Roux-en-Y gastric bypass (RYGB) surgery.

METHODS: The study included 60 patients who underwent elective laparoscopic RYGB surgery. Subjects were randomized to two groups as being managed with either standard fluid regimen (control group) or PVI (PVI group) during intraoperative period. After induction of general anesthesia, control group received 500 ml crystalloid bolus followed by 4-8 ml/kg/h infusion. Fluid management of the control group was guided by central venous pressure and mean arterial pressure. PVI group received 500 ml crystalloid bolus followed by 2 ml/kg/h infusion. If PVI had been > 14%, 250 ml colloid was administered. Norepinephrine was given by infusion to keep mean arterial pressure > 65 mmHg, if needed. Perioperative lactate levels, hemodynamic parameters, and renal functions were recorded.

RESULTS: In PVI group, volume of crystalloid and total fluid infusion during intraoperative period was significantly lower than the control group ($p < 0.05$). The groups did not significantly differ in terms of lactate or creatinine levels before or after the surgery ($p > 0.05$).

CONCLUSIONS: There is no need to administer extra volume of fluid to obese

patients undergoing laparoscopic bariatric surgery. Use of dynamic indicators like PVI helps to decrease intraoperative volume of infused fluids with no effects on either intraoperative or postoperative lactate levels in laparoscopic bariatric interventions.