

Stroke volume variation as a guide to fluid administration in morbidly obese patients undergoing laparoscopic bariatric surgery

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BACKGROUND: Perioperative fluid administration in morbidly obese patients is critical. There is scarcity of scientific information in literature on amount and rate of its application. Functional parameters (stroke volume variation (SVV), pulse pressure variation) are considered more accurate predictor of volume status of patients than blood pressure and central venous pressure.

METHODS: SVV was used as a guide for intraoperative fluid administration in 50 morbidly obese patients subjected to bariatric surgery. Pulse contour waveform analysis (LiDCO Cardiac Sensor System, UK Company Regd. 2736561, VAT Regd. 672475708) was utilized to monitor SVV, and a value more than 10% was used as infusion trigger for intraoperative fluid management.

RESULTS: Mean amount of fluid infused was 1,989.90 ml (+/-468.70 SD) for mean 206.94 min (+/-50.30 SD) duration of surgery. All patients maintained hemodynamic parameters (cardiac output, cardiac index, stroke volume, noninvasive blood pressure, heart rate) within 10% of the baseline values. Central venous pressure and SVV showed no correlation, except for short period initially. Renal and metabolic indices remained within normal limits.

CONCLUSION: Obese patients coming for laparoscopic bariatric surgery may not require excessive fluid. Intraoperative fluid requirement is the same as for nonobese patients. SVV is a valuable guide for fluid application in obese patients undergoing bariatric surgery.