Sandeep Sahu et al., J Nephrol Ther 2017, 7:3(Suppl)
DOI: 10.4172/2161-0959-C1-039

Study on the intraoperative transesophageal Doppler-guided versus central venous pressure-guided fluid therapy on renal allograft outcome in recipients undergoing living donor renal transplantation

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Background & Aim: Transesophageal Doppler (TED)-guided intraoperative fluid therapy has shown to noninvasively optimize intravascular volume and reduce postoperative morbidity. The aim of this study was to compare the effects of Doppler-guided intraoperative fluid administration and central venous pressure (CVP)-guided fluid therapy on renal allograft outcome and postoperative complications.

Material & Methods: A prospective nonrandomized active controlled study was conducted on end-stage renal disease patients scheduled for living donor renal transplant surgery. 110 patients received intraoperative fluid guided by corrected flow time (FTc) and variation in stroke volume values obtained by continuous TED monitoring. Data of 104 patients in whom intraoperative fluid administration was guided by CVP values were retrospectively obtained for a control.

Results: The amount of intraoperative fluid given in the study group (12.20±2.24 ml/kg/h) was significantly lower than in the controls (22.21±4.67 ml/kg/h). The amount of colloid used was also significantly less and fewer recipients were seen to require colloid (69 vs. 85%). The mean arterial pressures were comparable throughout. CVP reached was 7.18±3.17 mmHg in the study group. It was significantly higher in the controls (13.42±3.12 mmHg). The postoperative graft function and rate of dysfunction were comparable. Side-effects like postoperative dyspnoea (4.8 vs. 0%) and tissue edema (9.6 vs. 2.7%) were higher in the controls.

Conclusion: FTc-guided intraoperative fluid therapy achieved the same rate of immediate graft function as CVP-guided fluid therapy but used a significantly less amount of fluid. The incidence of postoperative complications related to fluid overload was also reduced. The use of TED may replace invasive central line insertions in the future.

Biography

Sandeep Sahu has done his MBBS in 2001 and Post-graduation (MD) in Anaesthesiology in 2005 from MLB Medical College, Jhansi, India. He is working as Additional Professor and Consultant in Transplant Anaesthesiology and Critical Care at Department of Anaesthesiology at Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, Uttar Pradesh, India since 2009. He had published more than 50 papers in reputed journals and has been serving as an Editorial Board Member of reputed journals.

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