

## **Pleth Variability Index-Directed Fluid Management in Abdominal Surgery under Combined General and Epidural Anesthesia**

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Pleth variability index (PVI), a noninvasive dynamic indicator of fluid responsiveness has been demonstrated to be useful in the management of the patients with goal directed fluid therapy under general anesthesia, but whether PVI can be used to optimize fluid management under combined general and epidural anesthesia (GEN-EPI) remains to be elucidated. The aim of our study was to explore the impact of PVI as a goal-directed fluid therapy parameter on the tissue perfusion for patients with GEN-EPI.

Thirty ASA I-II patients scheduled for major abdominal surgeries under GEN-EPI were randomized into PVI-directed fluid management group (PVI group) and non PVI-directed fluid management group (control group). 2 mL/kg/h crystalloid fluid infusion was maintained in PVI group, once PVI > 13 %, a 250 mL colloid or crystalloid was rapidly infused. 4-8 mL/kg/h crystalloid fluid infusion was maintained in control group, and quick fluid infusion was initiated if mean arterial blood pressure (BP) < 65 mmHg. Small doses of norepinephrine were given to keep mean arterial BP above 65 mmHg as needed in both groups. Perioperative lactate levels, hemodynamic changes were recorded individually.

The total amount of intraoperative fluids, the amount of crystalloid fluid and the first hour blood lactate levels during surgery were significantly lower in PVI than control group,  $P < 0.05$ . PVI-based goal-directed fluid management can reduce the intraoperative fluid amount and blood lactate levels in patients under GEN-EPI, especially the crystalloid. Furthermore, the first hour following GEN-EPI might be the critical period for anesthesiologist to optimize the fluid management.