

Goal-directed Haemodynamic Therapy After Abdominal Surgery



Available evidence suggests that the use of perioperative goal-directed haemodynamic therapy (GDHT) may facilitate recovery in patients undergoing major abdominal surgery, according to a systematic review published in the journal *Critical Care*.

Perioperative fluid management has been recognised as an important factor in postoperative recovery following major abdominal surgery. There is evidence that either too little or too much fluid administration during the perioperative period was associated with organ dysfunction, delayed gastrointestinal (GI) function, and increased complication rates after surgery. However, optimal fluid management is difficult to achieve using standard parameters (e.g., heart rate, blood pressure, central venous pressure, or urine output) that poorly estimate preload and preload responsiveness.

GDHT was proposed by introducing different haemodynamic variables into a dynamic perspective of individual fluid loading with or without vasoactive substances to reach a predefined goal of optimal preload and/or oxygen delivery. While GDHT has been used in the clinical setting for years, the evidence for the beneficial effect of GDHT on postoperative recovery remains inconsistent. Researchers conducted a systematic review to evaluate the effect of perioperative GDHT in comparison with conventional fluid therapy on postoperative recovery in adults (i.e., >16 years) undergoing major abdominal surgery.

The eligible studies of this systematic review were identified using the patient, intervention, comparison, outcomes, study design strategy. Forty-five eligible randomised controlled trials (RCTs) were included in the analysis.

Results show that perioperative GDHT was associated with a significant reduction in short-term mortality, long-term mortality, and overall complication rates. GDHT also facilitated GI function recovery, as demonstrated by shortening the time to first flatus by 0.4 days and the time to toleration of oral diet by 0.74 days.

However, researchers highlighted that they did not identify the beneficial effects of GDHT on mortality and GI function when they restricted the analysis to higher-quality and large-sample-size studies. They said that future studies should be adequately powered and methodologically rigorous enough to confirm a clinically relevant effect in this area.

GDHT is currently recommended in the context of enhanced recovery programmes, especially for moderate- to high-risk patients. High-risk patients tend to have an increased stress response to surgical aggression, increased oxygen demand, and reduced physiological reserves to deal with the metabolic requirements of the perioperative period.

"In our subgroup analyses, we identified high-risk patients as a group that may potentially benefit from GDHT. However, the results of our subgroup analysis indicated that GDHT is beneficial mainly when used outside enhanced recovery programmes. The potential explanation is that enhanced recovery programmes emphasise the avoidance of bowel preparation, minimise fasting, and use preoperative carbohydrate loading. As a result, patients are less likely to be fluid-depleted during surgery and thus may not benefit as much from targeted fluid administration," the researchers wrote.

Source: [Critical Care](#)

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