

Study: Long-term impact of crystalloids vs colloids after major abdominal surgery



A 1-year follow up of patients randomised to receive hydroxyethyl starch solution or balanced crystalloid solution as part of intraoperative goal-directed fluid therapy during major open abdominal surgery, found there was no difference in renal function between the groups.

The study, by Alexandre Joosten, MD, Department of Anesthesiology, CUB Erasme, Belgium, and colleagues, is on a secondary outcome of the [previously published trial](#) that showed that administration of balanced hydroxyethyl starch solution as part of intraoperative goal-directed fluid therapy was associated with better short-term outcomes than administration of a balanced crystalloid solution in patients having major open abdominal surgery.

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Patients enrolled in the earlier study were followed up for renal function and disability. The main outcome measure was the estimated glomerular filtration rate. Other outcomes were serum creatinine, urea and pruritus. Disability was assessed using the World Health Organization Disability Assessment Schedule 2.0 (WHODAS) score.

Of the 160 patients in the original study, renal function follow-up data was available for 129 (81%) and WHODAS score for 114 (71%). There were no statistically significant differences in estimated glomerular filtration rate at 1 year ($\text{ml min}^{-1} 1.73 \text{ m}^{-2}$): 80 [65 to 92] for crystalloids versus 74 [64 to 94] for colloids; 95% CI [-10 to 7], $P = 0.624$. However, the WHODAS score (%) was statistically significantly lower in the colloid than in the crystalloid group (2.7 [0 to 12] vs. 7.6 [1.3 to 18]; $P = 0.015$), and disability-free survival was higher (79% vs. 60%; 95% CI [2 to 39]; $P = 0.024$).

The researchers write that it is not possible to completely rule out a difference as the study was not powered to detect differences in long-term renal function. They note that this is the first study to report long-term effects of balanced hydroxyethyl starch versus balanced crystalloid administration in patients undergoing major abdominal surgery, and it supports recent systematic reviews and meta-analyses showing no evidence for harm from hydroxyethyl starch solutions on short-term renal function in surgical patients.

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