



Targeted volume management reduces length of hospital stay after major surgery

Gan TJ, Soppitt A, Maroof M, El-Moalem H, Robertson KM, Moretti E, Dwane P, Glass PS. *Goal-directed intra-operative fluid administration reduces length of hospital stay after major surgery.* Anesthesiology 2002; 97(4):820-826

Clinical Application: Intra-operative

This randomised controlled trial examined the impact of targeted volume management (TVM), using oesophageal Doppler monitor (ODM) to guide delivery of fluid (colloid) boluses to optimise heart and circulatory performance compared to fluid delivery based on conventional haemodynamic parameters.

Protocol Outline

100 patients undergoing major general surgery, urologic or gynaecologic surgery were randomly allocated either to conventional intra-operative fluid management, reliant on urine output, heart rate and blood pressure, or TVM, using colloid boluses, guided by ODM, to maximise stroke volume.

Results

Overall complications in the TVM group were significantly less than those in the conventional treatment group (42% versus 76%, $p = 0.001$). Patients in the TVM group experienced significantly less nausea and vomiting than the conventionally managed group (14% vs. 36%, $p < 0.05$) and were able to tolerate an oral diet significantly earlier (3 vs. 4.7 days, $p = 0.01$).

Patients in the TVM group had a significantly shorter length of hospital stay compared to the conventional treatment group (5 days vs. 7 days, $p = 0.03$).

Commentary

This trial demonstrates that the significant positive impact of TVM is likely to be independent of surgery type.

Gut related complications, an important cause of protracted hospital stay, are the primary consequence

of the effective reduction in circulating blood volume ('hypovolaemia') that is associated with major surgery. Hypovolaemia affects patients having surgery because of the combined impact of:

1. pre-operative starvation and dehydration through the 'nil by mouth' regime
2. anaesthetic agents in reducing the body's ability to compensate for the effects of the nil-by-mouth regime
3. the development of a 'leaky' circulation and associated fluid loss also caused by anaesthetic agents

These factors all but ensure the presence of relative hypovolaemia before surgery begins.

This trial clearly demonstrates the reduction in gut related complications that can be achieved by optimising circulating blood volume using the CardioQ™ oesophageal Doppler monitor and improving the heart's performance through TVM.



This is a summary of the referenced clinical trial and should not be used for citation.

Please refer to the source material for research purposes.



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