RCT Summary

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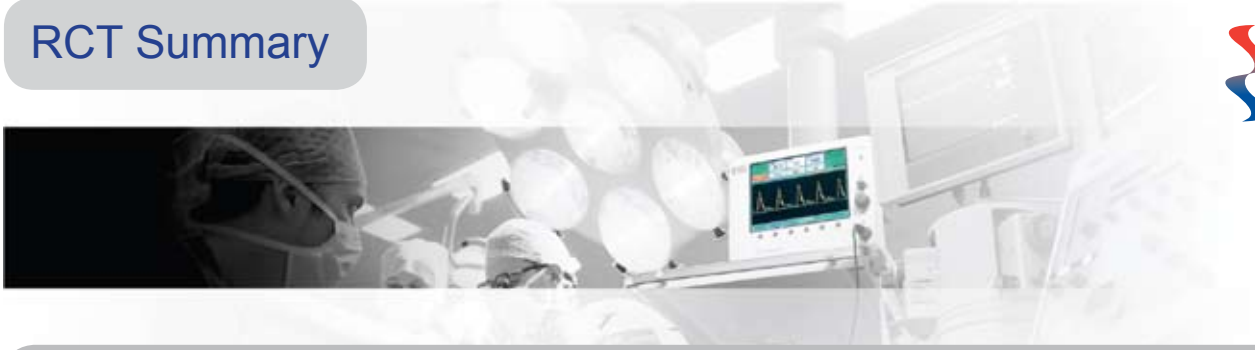

Comparison of guided fluid delivery to conventional management in patients undergoing repair of fractured hips

Venn R, Steele A, Richardson P, Poloniecki J, Grounds M, Newman P. *Randomised controlled trial to investigate influence of the fluid challenge on duration of hospital stay and peri-operative morbidity in patients with hip fractures.* Br J Anesth 2002; 88:65-71

Clinical Application: Intra-operative

This study looked at the impact of targeted intra-operative fluid delivery, using either flow-based monitoring (oesophageal Doppler monitor, ODM) or pressure-based monitoring (central venous pressure catheter, CVP) to optimise heart and circulatory performance, compared to conventional fluid management.

Protocol Outline

Ninety patients undergoing surgery for repair of a hip fracture were randomly allocated either to (1) conventional intra-operative fluid management using heart rate and arterial blood pressure or (2) to targeted volume management (TVM) using colloid boluses, guided by ODM, to maximise stroke volume, or (3) fluid management based on targeted changes in central venous pressure (CVP), using colloid boluses. The trial looked at the impact of the different treatment strategies on the time taken for patients to be medically fit for discharge, length of hospital stay and post-operative complications. The trial also recorded changes in some haemodynamic parameters. Importantly, no attempt was made to examine the differences between the CVP- or ODM/guided intervention employed in the 'treatment' groups.

Results

The time to medically fit to discharge was significantly shorter in both the CVP and the ODM groups compared to the conventional treatment group, the ODM group being the shortest of the three groups (ODM 8 days; CVP 10 days; conventional 14 days). No statistically significant differences were seen either in overall complications or mortality between the three groups and there were no statistically significant differences in overall hospital stay.

Commentary

While the data analysis in this trial may be limited, with no sub-group analysis provided, and the definitions of complications perhaps a little vague, the trial demonstrated that patients having their intra-operative fluid delivery guided using "active" monitoring and pre-defined targets were deemed medically fit for discharge much sooner than those treated conventionally.

Furthermore, there is a strong suggestion that using the CardioQ™ , a flow-based approach (ODM), yields superior results (ODM 8 days versus 10 days or 14 days), in terms of length of stay, to one based on pressure – either CVP or a combination of arterial pressure and heart rate, as used in the conventional management group.

With respect to complications, five potentially serious complications, related to the placement of the invasive monitoring catheter, were reported in the CVP group, while no complications were reported in the ODM group.

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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