



## Targeted volume management using oesophageal Doppler in patients undergoing hip fracture repair reduces time to being declared medically fit to leave hospital and reduces overall length of hospital stay

Sinclair S, James S, Singer M. *Intra-operative intravascular volume optimization and length of hospital stay after repair of proximal femoral fracture: randomised controlled trial.* BMJ 1997; 315:909-912

### Clinical Application: Intra-operative

This randomised, controlled clinical trial looked at the impact of stroke volume optimisation (targeted volume management or TVM) using colloids, guided by oesophageal Doppler monitor (ODM), on the time taken for patients undergoing surgical repair of a fractured hip to be ready to leave hospital ('medically fit for discharge') as well as the actual time to leave hospital.

### Protocol Outline

Forty patients undergoing surgery for repair of a hip fracture were randomly allocated either to conventional intra-operative fluid management or to targeted volume management (TVM) using colloid boluses, guided by ODM, to maximise stroke volume. Key haemodynamic parameters were measured in both groups, as was the time to medically fit to discharge and actual discharge. Although recorded, the study was not powered to demonstrate differences in mortality between the control and treatment groups.

### Results

Patients in the TVM group has significantly greater changes in both stroke volume and cardiac output between the start and end of surgery compared to the conventionally managed group. Post-operative recovery was significantly faster in the TVM group, with a median time to medically fit to discharge of 10 days (range 9-15 days) compared to 15 days (11-40 days) in the conventionally managed group. Similarly, the TVM group were discharged from hospital in a median of 12 days (8-13 days) compared to 20 days (10-61 days), a reduction in hospital stay of 39%.

### Commentary

Patients undergoing hip fracture repair have a significant risk of death. This kind of surgery is associated with serious complications and often protracted hospital stay.

These patients are invariably prone to and at risk from a reduced circulating blood volume (hypovolaemia), a condition common to any form of major surgery and which has been demonstrated to contribute to the risks of post-operative complications.

In this study the use of the CardioQ™ to optimise the function of the heart and the ability of the circulatory system to deliver sufficient oxygen to meet the needs of the patient throughout the surgical procedure (TVM) meant that:

1. patients were better able to deal with the physical stress of surgery
2. patients recovered more quickly and more fully from the effects surgery
3. patients were ready to go home earlier after their surgery than those treated conventionally



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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