

Fast Track Surgery Fluids and drugs: what makes a difference?

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This year (2010) the UK Department of Health launched an Enhanced Recovery Partnership Programme (aka: Fast Track Surgery). The aim is to spread the principles of enhanced recovery after surgical procedures to all UK National Health Service Hospitals with the aim of improving quality of care, reducing complications, length of stay and overall cost. The program has settled on the following core principles (I have highlighted the six that relate to fluids and drugs):

- 1. Optimising the pre-operative health state, commencing in primary care**
2. Anaesthetic pre-admission assessment with medical optimization
3. Risk stratification and discharge planning
4. Informed decision making and managing patient expectations
5. Admission on day of surgery
- 6. Carbohydrate loading and maximising patient hydration pre-operatively**
- 7. Individualised goal directed fluid therapy**
- 8. Using short-acting anaesthetic agents and minimal access incisions when possible**
9. Minimal use of drains/tubes where no supporting evidence
- 10. Avoidance of post-operative opiates when possible**
11. Active early planned mobilization
- 12. Early post-operative oral hydration and nutrition**
13. Procedure-specific daily goals
14. Discharge once predetermined criteria met

Individualised goal directed fluid therapy has the largest and strongest evidence base and yet is by far the most controversial. The British Consensus Guidelines on Intravenous Therapy for Adult Surgical Patients (GIFTASUP) were published in 2008. The guidelines use the Oxford Centre for Evidence-based Medicine Levels of Evidence methodology, with a score of 1a representing the highest possible level of supporting clinical evidence.

"In patients undergoing abdominal surgery, intraoperative treatment with intravenous fluid to achieve an optimal value of stroke volume should be used where possible as this may reduce postoperative complication rates and duration of hospital stay. Level 1a."

Further recommendations at Evidence level 1b also apply to optimisation of stroke volume in other surgical procedures (e.g gynaecological, urological and major orthopaedic).

Meta-analysis of seven RCTs of Cardiac Output Guided Fluid Management has concluded that a significant reduction in the length of hospital stay for patients receiving Doppler guided fluid management of 2.98 days. The National Health

Service for the UK and the Centres for Medicare and Medicaid (CMS) for the USA have commissioned Health Technology Assessments (HTA) to examine the value of wider introduction of Doppler-guided fluid management. Both conclude that it was cost effective. The UK report used the same Quality Adjusted Life Year (QALY) methodology as the National Institute for Health and Clinical Excellence (NICE). The report concluded that Doppler guided fluid management during surgery resulted in fewer complications, a shorter length of hospital stay and possibly fewer deaths.

In January 2010 the UK National Technology Adoption Centre reported a 3 centre evaluation of the introduction of Oesophageal Doppler Cardiac Output Monitoring in >1,200 patients. The addition of ODM resulted in a statistically significant reduction in complications and length of hospital stay. A "how to why o guide" is available free on line (ref 10).

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