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# Editorial

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## FAST-TRACK SURGERY – WHAT IS IT AND WHY SHOULD WE DO IT ?

Major improvements in perioperative care and postoperative outcome have been achieved in recent years due to newer anaesthetic and analgesic techniques to provide efficient pain relief, development of minimal invasive surgery and scientific evidence for rational use of traditional care principles such as nasogastric tubes, drains, urinary catheters, preoperative bowel clearance, early oral feeding and mobilisation. Realising that postoperative outcome is dependent on multiple factors, the concept of “fast-track surgery” has been introduced to combine single modality evidence-based care principles into a multimodal rehabilitation effort to provide effective pain relief allowing early mobilisation, reduction of nausea, vomiting and ileus, thereby facilitating early oral nutrition and with the all-over aim of providing a “pain- and risk-free operation”.

The results comparing fast-track vs. traditional care surgery have documented significantly enhanced recovery, reduced need for hospitalisation and a lower risk of medical morbidity (cardiovascular and pulmonary). Most studies, including multinational and randomised studies, have come from colonic surgery with a clear documentation of a reduction of hospital stay from about 8 – 12 days to about 2 – 4 days with early restoration of gastro-intestinal function and oral feeding and with less postoperative fatigue. Consequently, nursing care per patient course is reduced. Also, there is enough evidence to document fast-track surgery to be safe and not leading to increased readmissions or transferral of health care problems to other sectors such as rehabilitation homes, home nurses or general practitioners. A significant finding has been preservation of body composition (lean body mass), muscle strength and exercise capacity with fast-track vs. traditional care colonic surgery. These findings support the documented shortened convalescence and reduced fatigue, since the late postoperative fatigue predominantly is caused by loss of muscle mass and function and de-conditioning of the cardio-vascular response to exercise.

The economic implications of fast-track surgery have been demonstrated in several studies and with major cost savings, predominantly due to the reduced hospital stay and medical morbidity.

The role of the laparoscopic approach in different types of fast-track surgery remains somewhat controversial despite the obvious and well documented physiological advantages of minimal invasive surgery. Thus, randomised studies comparing open vs. laparoscopic colonic surgery have so far not included appropriate implementation of the evidence-based principles of fast-track surgery in the “open” (or laparoscopic) groups, thereby hindering sufficient interpretation. Similarly, only minor and probably not clinically relevant differences are available from studies in cholecystectomy and groin hernia repair on hospital stay and convalescence. A classical example of the insufficient design is colonic surgery where the randomised studies have shown hospitalisation in the laparoscopic groups to be around 6 days which is far beyond the recovery documented with “open”



fast-track open colonic surgery with about 2-4 days of required hospitalisation. Nevertheless, the inclusion of minimal invasive surgery in the all-over perioperative care regimen in different types of surgery is the way forward and should be assessed properly in future trials.

Despite the fact that the principles of fast-track surgery have been available and documented for several years, several multinational surveys have shown a slow translation of the scientific data into general clinical practice. This is surprising and disappointing because fast-track surgery represents a combined evidence-based approach. Consequently, there is a major demand for increased multi-disciplinary collaboration between anaesthesiologists, surgeons and surgical nurses to implement the evidence-based data from fast-track surgery. This process may be facilitated by the establishment of regional or national procedure-specific databases, thereby increasing attention towards areas where improvement is required.

Although fast-track surgery is now generally well documented to improve surgical outcome and recovery there is a need for further and intensified research in different types of surgery to define the procedure-specific optimal package of care, the optimal duration of postoperative hospitalisation, the specific role of minimal invasive surgery, the use of non-opioid multimodal analgesia, the need for pharmacological reduction of stress responses (and organ dysfunctions) by glucocorticoids, beta-blockers, statins, growth factors, etc. Also, recent studies have emphasized the role of perioperative fluid management to improve outcome, and where avoidance of a crystalloid excess is important. Furthermore, the use of the so-called “goal-directed fluid therapy concept” where pre- and intraoperative fluid management is individualised based upon optimisation of cardiac stroke volume has been documented to enhance outcome and reduce morbidity in high-risk patients, including major abdominal surgery. This concept needs to be included and assessed within the fast-track methodology. In summary, the future is now to evaluate, implement and further develop fast-track surgery across surgical procedures.

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