Clinical Nutrition 31 (2012) 783–800

Contents lists available at SciVerse ScienceDirect

Clinical Nutrition

journal homepage: http://www.elsevier.com/locate/clnu

Guidelines for perioperative care in elective colonic surgery: Enhanced Recovery After Surgery (ERAS®) Society recommendations☆

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ARTICLE INFO

Article history:
Received 10 August 2012
Accepted 19 August 2012

Keywords:
Perioperative care in colonic surgery
ERAS

SUMMARY

Background: This review aims to present a consensus for optimal perioperative care in colonic surgery and to provide graded recommendations for items for an evidenced-based enhanced perioperative protocol.

Methods: Studies were selected with particular attention paid to meta-analyses, randomised controlled trials and large prospective cohorts. For each item of the perioperative treatment pathway, available English-language literature was examined, reviewed and graded. A consensus recommendation was reached after critical appraisal of the literature by the group.

Results: For most of the protocol items, recommendations are based on good-quality trials or meta-analyses of good-quality trials (quality of evidence and recommendations according to the GRADE system).

Conclusions: Based on the evidence available for each item of the multimodal perioperative-care pathway, the Enhanced Recovery After Surgery (ERAS) Society, International Association for Surgical Metabolism and Nutrition (IASMEN) and European Society for Clinical Nutrition and Metabolism (ESPEN) present a comprehensive evidence-based consensus review of perioperative care for colonic surgery.

☆ The guidelines are published as a joint effort between the Enhanced Recovery After Surgery (ERAS) Society, for Perioperative Care, The European Society for Clinical Nutrition and Metabolism (ESPEN) and The International Association for Surgical Metabolism and Nutrition (IASMEN) and copyrights for this publication is shared between the three societies. The guidelines are published jointly in World Journal of Surgery (IASMEN) and Clinical Nutrition (ESPEN), and will also be available on the ESPEN (http://www.espen.org) and ERAS Society websites (http://www.erassociety.org).

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0261-5614/$ – see front matter
http://dx.doi.org/10.1016/j.clnu.2012.08.013

1. Introduction

The delay until full recovery after major abdominal surgery has been greatly improved by the introduction of a series of evidence-based treatments covering the entire perioperative period and formulated into a standardised protocol. Compared with traditional management, Enhanced Recovery After Surgery (ERAS®) represents a fundamental shift in perioperative care.[1–4] The ERAS-care pathways reduce surgical stress, maintain postoperative physiological function, and enhance mobilisation after surgery. This has resulted in reduced rates of morbidity, faster recovery and shorter length of stay in hospital (LOSH) in case series from dedicated centres[1–4] and in randomised trials.[5,6]

Several versions of Enhanced-Recovery Programmes have been published over the years.[7–9]

This article represents the joint efforts of the ERAS Society (www.erassociety.org), International Association for Surgical Metabolism and Nutrition (IASMEN; www.iasmen.org) and The European Society for Clinical Nutrition and Metabolism (ESPEN) to present an updated and expanded consensus review of perioperative care for colonic surgery based on current evidence.

2. Methods

2.1. Literature search

The authors met in April 2011 and the topics for inclusion were agreed and allocated. The principal literature search utilised MEDLINE, Embase and Cochrane databases to identify relevant contributions published between January 1966 and January 2012. Medical Subject Headings terms were used, as were accompanying entry terms for the patient group, interventions and outcomes. Key words included "colon", "enhanced recovery" and "fast track". Reference lists of all eligible articles were checked for other relevant studies. Conference proceedings were not searched. Expert contributions came from within the ERAS Society Working Party on Systematic Reviews.

2.2. Study selection

Titles and abstracts were screened by individual reviewers to identify potentially relevant articles. Discrepancies in judgement were resolved by the senior author and during committee meetings of the ERAS Society Working Party on Systematic Reviews. Reviews, case series, non-randomised studies, randomised control studies, meta-analyses and systematic reviews were considered for each individual topic.

2.3. Quality assessment and data analyses

The methodological quality of the included studies was assessed using the Cochrane checklist.[10] The strength of evidence and conclusions were assessed and agreed by all authors in May 2012. Quality of evidence and recommendations were evaluated according to the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) system.[11–13] Quoting from the GRADE guidelines,[13] the recommendations are given as follows: "Strong recommendations indicate that the panel is confident that the desirable effects of adherence to a recommendation outweigh the undesirable effects". "Weak recommendations indicate that the desirable effects of adherence to a recommendation probably outweigh the undesirable effects, but the panel is less confident". Recommendations are based not only on quality of evidence ("high", "moderate", "low" and "very low") but also on the balance between desirable and undesirable effects; and on values and preferences.[13] The latter implies that, in some cases, strong recommendations may be reached from low-quality data and *vice versa*.

3. Evidence base and recommendations–ERAS items

3.1. Preadmission information, education and counselling

Detailed information given to patients before the procedure about surgical and anaesthetic procedures may diminish fear and anxiety and enhance postoperative recovery and quicken hospital discharge.[14,15] A preoperative psychological intervention, aimed at decreasing patient anxiety, may also improve wound healing and recovery after laparoscopic surgery.[16,17] Personal counselling, leaflets or multimedia information containing explanations of the procedure along with tasks that the patient should be encouraged to fulfil may improve perioperative feeding, early postoperative mobilisation, pain control, and respiratory physiotherapy; and hence reduce the prevalence of complications.[18–20] Ideally, the patient and a relative/care provider should meet with surgeon, anaesthetist and nurse.

Summary and recommendation: Patients should routinely receive dedicated preoperative counselling (can only be beneficial and not harmful).
Evidence level: Low (study quality, uncertain endpoints)
Recommendation grade: Strong

3.2. Preoperative optimisation

Eight randomised controlled trials (RCTs) have been undertaken in various settings investigating the role of preoperative physical conditioning (Prehab) on surgical outcomes.[21–27] The surgical settings were general abdominal surgery, cardiothoracic surgery and orthopaedic surgery. Although there were varying degrees of improvement in physiological function and surgical recovery, only 1 study found improvement in physiological function that correlated with improved surgical recovery.[25] These results may have been influenced by: a lack of appropriate physiological endpoints; studies being conducted within elderly cohorts; excessively intensive exercise regimens; and lack of adherence to the designated programmes. Further research is needed by investigating Prehab in younger patient populations. There is also a need for further research into methods that can improve adherence to Prehab.

It is generally accepted that preoperative medical optimisation is necessary before surgery. Alcohol abusers have a two-to-threefold increase in postoperative morbidity, the most frequent complications being bleeding, wound and cardiopulmonary complications. One month of preoperative abstinence reduces postoperative morbidity by improving organ function.[28,29] Smoking is another patient factor that has a negative influence on recovery. Current smokers have an increased risk for postoperative pulmonary and wound complications.[30] One month of abstinence from smoking is required to reduce the incidence of complications.[30–33]

Summary and recommendation: Increasing exercise preoperatively may be of benefit. Smoking should be stopped 4 weeks before surgery and alcohol abusers should stop all alcohol consumption 4 weeks before surgery (can only be beneficial and not harmful).
Evidence level: Prehab: Very low (inconsistency)
Alcohol: Low (only one high-quality RCT)
Smoking: High
Recommendation grade: Prehab: No
Alcohol: Strong
Smoking: Strong