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Original article

Implementation of enhanced recovery programs for bariatric surgery. Results from the Francophone large-scale database

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Abstract

Background: The feasibility, safety, and efficacy of programs for enhanced recovery after bariatric surgery (ERABS) are now well established. However, data concerning their large-scale implementation remain insufficient. The aim of this study was to review the multicenter implementation of ERABS.

Objectives: ▪▪▪

Setting: This retrospective analysis of a prospective database was conducted in 15 Groupe francophone de Rehabilitation Améliorée après ChirurgiE centers on data from March 2014 to January 2017.

Methods: The Francophone working Group for Enhanced Recovery After Surgery (Groupe francophone de Rehabilitation Améliorée après ChirurgiE) edited and released protocols of ERABS from its members. Compliance with ERABS, lengths of hospital stay, and postoperative morbidity were obtained from the Groupe francophone de Rehabilitation Améliorée après ChirurgiE–audit database.

Results: In this study, 1667 patients were included. Procedures were sleeve gastrectomy (n = 1011), gastric bypass (n = 300), or mini-bypass (n = 356). Mean body mass index was 41.8 ± 8.3 kg/m^2. Global morbidity was 2.57%, and surgery-related morbidity was 1.67% (mostly anastomotic leakages and hemorrhage). Mean length of hospital stay was 2.4 ± 3.6 days. Overall compliance was 79.6%. Among the 23 elements of the ERABS program, 14 were applied in >70% of instances, 6 in between 50% and 70%, and 3 in <50%. The elements least often applied were limb intermittent pneumatic compression during surgery (23.3%), multimodal analgesia (49.5%), and optimal perioperative fluid management (43.8%).

Conclusion: This study shows that even if the overall compliance was good, the large-scale implementation of ERABS can still be improved, as several elements remain insufficiently applied. This finding highlights the importance of thorough, continuous training in addition to the need for repeated audits by centers involved in ERABS programs. (Surg Obes Relat Dis 2017;▮:00–00.) © 2017 American Society for Metabolic and Bariatric Surgery. All rights reserved.

Keywords: Obesity; Sleeve gastrectomy; Gastric bypass; Enhanced recovery after surgery

Far-reaching changes occurred in the late 1990s with the emergence of a new perioperative approach that incorporated evidence-based perioperative interventions for the optimization

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of patient care. What had initially been "fast track surgery" became "enhanced recovery after surgery" (ERAS) [1,2]. Enhanced recovery (ER) programs set standardized perioperative pathways to improve convalescence and reduce postoperative morbidity and length of hospital stay.

An abundant literature supports ER in various types of surgery [2,3]. ER programs were first developed in colorectal surgery, where they are now widely implemented [4]. The extension of ERAS programs to bariatric surgery came later, but studies have now confirmed their feasibility, safety, and efficacy [5–8]. However, data on the implementation of enhanced recovery after bariatric surgery (ERABS) are still scant.

The aim of this study was to review the implementation of ERABS programs through a large prospective database.

Methods

Type of study

This was a retrospective analysis of a prospective database from the Francophone Group for Enhanced Recovery After Surgery (Groupe francophone de Réhabilitation Améliorée après ChirurgiE [GRACE]). Fifteen centers registered in the GRACE-Audit database participated in this study. GRACE-Audit has a dual function: it serves as database and audit tool software. It is freely accessible online (www.grace-audit.fr) and was provided to all participating GRACE centers. Data were collected in a web-based host, requiring manual submission of each patient's data that had been accredited for healthcare data handling (according to the French ministerial decree of January 4, 2006). Data collection was declared to the French data protection authority (CNIL) according to the terms of the modified law of January 6, 1978 and CNIL authorization 2014 (#1817711). For the purpose of the present study, the participants were asked to provide the overall number of bariatric procedures performed during the same period.

Inclusion and exclusion criteria

The inclusion criteria were patients with age >18 years, American Society of Anesthesiologists class ≤3, and a body mass index between 30 and 50 kg/m^2 needing bariatric surgery according to the French Public Health Authority (Haute Autorité de Santé) either by sleeve gastrectomy or bypass (Roux-en-Y gastric bypass of mini-bypass, i.e., one anastomosis bypass), who agreed to participate to the study. The decision to carry out the surgery was validated by a multidisciplinary team: patients had no contraindication for general anesthesia, none were living alone, all were able to go home or be transferred to a convalescent home after being discharged from the hospital, and all could be contacted by telephone. All patients gave their written informed consent to take part.

The exclusion criteria were patients who were unwilling to participate, those who presented severe associated diseases (heart or lung diseases, diabetes, immunosuppression, platelet disorders, or receiving curative anticoagulant treatment), and pregnant women.

Assessment criteria

Implementation of ERABS elements. The primary assessment of this study was to determine the extent of compliance with ERABS in France.

The ERABS consists of a list of guidelines for the multimodal perioperative management of patients. Twenty-four elements are divided into pre-, intra- and postoperative recommendations. ERABS is a bariatric protocol that was established by the GRACE group according to international guidelines.

Regarding preoperative management, precise preoperative information for the patient (counseling and education) was recommended. More than 3 weeks of tobacco smoking cessation was also recommended. Routine premedication was not recommended, but tranquilizers could be prescribed on a case-by-case basis for preoperative anxiety. Preoperative fasting was to be maintained for <6 hours for solids and 2 hours for clear fluids such as water, coffee, or clear juice. Preoperative carbohydrate loading was also recommended, except for diabetic patients.

For intraoperative management and surgery, the laparoscopic approach was preferred to open surgery. Dexamethasone administration was recommended on induction of anesthesia, and prophylactic antibiotic treatment was planned before incision. Hypothermia prevention was recommended. Limb intermittent pneumatic compressions, adequate fluid management during surgery, and immediate gastric tube removal at the end of the surgery were also recommended. Abdominal drainage and epidural analgesia during surgery were not recommended.

Postoperatively, multimodal analgesia, nonsteroidal anti-inflammatory drugs at weight-adapted doses and limited to 48 hours, adequate prevention of nausea and vomiting, and venous thromboembolism (VTE) prophylaxis were recommended. The importance of early mobilization and refeeding (starting with liquid meals) was also clearly emphasized. By contrast, routine bladder catheterization and gastric tubes were not recommended, whereas routine prophylactic oxygen supplementation or noninvasive positive pressure ventilation was recommended only in the case of diagnosed obstructive sleep apnea.

Other endpoints. Overall morbidity and surgery-related morbidity were analyzed. All complications were collected and sorted by type. We considered "surgery-related morbidity" to be any complication resulting from the surgical procedure, such as anastomotic leakage, peritonitis, intraperitoneal bleeding, anastomotic bleeding, or any other event directly caused by the surgical act. The Clavien-Dindo [9] classification was used to categorize complications.

We analyzed decompensation of latent preexisting conditions or acute medical conditions, such as cardiac

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