



ENHANCED RECOVERY AFTER SURGERY IN GYNECOLOGY

Obstetrics & Gynaecology

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ABSTRACT

The Enhanced Recovery After Surgery (ERAS) route was created to help patients following major surgery recover more quickly. Three crucial elements include the preoperative, intraoperative, and postoperative regimens. Early eating, opioid-free multimodal pain treatment, and euvoolemia are just a few of the elements that make up enhanced recovery protocols, which all work together to speed postoperative recovery. In order to optimize patient care, pre- and post-habilitation are crucial. The results for patients significantly improved once the ERAS was implemented, and the overall cost of treatment decreased. Evidence-based medicine is the foundation of the ERAS. In this review, we summarized the most recent data on ERAS and how it benefits the patient.

KEYWORDS

ERAS, Enhanced Recovery After Surgery, recovery protocols, post-operative recovery

INTRODUCTION

Multifaceted perioperative care pathway called "enhanced recovery after surgery" (ERAS) aims to reduce stress during a patient's journey through surgery in order to make it easier to maintain organ and body function prior to the operation and, as a result, achieve early recovery.¹

The primary reasons why people stay in the hospital after relatively easy major abdominal surgery are the requirement for parenteral analgesics, the requirement for intravenous fluids as a result of ongoing gut impairments, and bed rest brought on by a lack of activity.¹

A global program for improving surgical quality, Enhanced Recovery After Surgery (ERAS) began with colorectal surgery and has since expanded to several disciplines.² It is widely recognized that the catabolic condition brought on by surgical stress results in altered pulmonary and gastrointestinal function, increased heart demand, relative tissue hypoxia, increased insulin resistance, and poor coagulation profiles.³

With the intention of preserving normal physiology during the perioperative phase, Enhanced Recovery After Surgery (ERAS) pathways were created with the aim of maximizing patient outcomes without raising the risk of postoperative complications or readmissions.³ The fundamental tenets of ERAS call for consideration of the following: preoperative counseling, nutritional strategies, including avoiding prolonged perioperative fasting; perioperative factors, including a focus on regional sedative and nonopioid analgesic approaches; fluid balance; and advancement of postoperative recovery methods, including prompt mobilization as well as adequate thromboprophylaxis.³ If applied properly, ERAS has been demonstrated to encourage patient mobilization, lower post-operative complication rates, shorten hospital stays, and lower expenses.⁴ The three main parts of the ERAS approach are preoperative, intraoperative, and postoperative. However, improving a patient's physical condition prior to surgery is the first step towards enhancing recovery. Therefore, by providing preoperative education and counseling, primary care physicians can assist the effective implementation of enhanced recovery and contribute to better patient outcomes. Additionally, it's critical to keep in mind that ERAS is a comprehensive strategy that ought to be employed for all surgical patients; in simple terms, everybody undergoing a surgical procedure ought to have accelerated recovery.⁴ The advantages of ERAS have been verified in a variety of gynecologic procedures, including open and minimally invasive techniques, benign and oncologic procedures.³ Currently, ERAS protocols have been effectively adopted in a number of surgical specialties, including gynecology.⁵ Gynecologic surgery is regularly performed, hysterectomy is one of the most common surgeries carried out in hospital operating rooms each year.⁶ The ERAS society promotes particular procedures in this field, ranging from simple hysterectomy protocols to sophisticated cytoreductive cancer surgeries.^{7,8} This society offers recommendations for managing patients undergoing gynecological operations and other forms of surgery before, during, and after the procedure.^{9,10} The ERAS society also offers evidence-based recommendations for postoperative care in gynecologic oncology. These recommendations cover the previously

mentioned postoperative analgesia, postoperative glucose control, prevention of postoperative ileus, postoperative thromboembolism prophylaxis, avoidance of peritoneal drainage, early mobilization, and provision of urinary drainage.¹⁰ After exploratory laparotomy, ERAS methods and their associated outcomes in gynecologic surgery and gynecologic oncology have been extensively researched. However, there is not a lot of information available about the use of ERAS in minimally invasive gynecologic surgery (MIGS) and benign gynecology.^{11,12,13,14} MIGS is characterized by the application of less invasive procedures like hysteroscopy or laparoscopy. Instead of one huge incision, as is typical in laparotomy, it necessitates several tiny incisions (or none at all). A study done examined several ERAS procedures used in gynecologic cancer patients undergoing gynecologic surgery. Their retrospective case-control analysis revealed that, when compared to the historical control group, the LOS in the ERAS group was considerably lower. Although there was no statistically significant difference in the two groups' pain assessments, the frequency of drug use (measured in morphine equivalents) decreased in the ERAS group.¹⁵

DISCUSSION

Outcomes of ERAS Implementation

The following are essential elements of enhanced recovery protocols:

1) Thorough patient education that covers patient expectations and goals related to surgery; 2) significantly shorter preoperative fasting period; active use of oral carbohydrate and electrolyte fluids up until presentation for surgery; 3) multimodal pain management strategy that includes non-opioid analgesics and regional anesthesia to reduce opioid use; and 4) prompt return to normal diet and activities.¹⁶

Length of Stay

Enhancing patients' functional rehabilitation and reducing postoperative stress are the goals of active, safe treatments known as enhanced recovery pathways. based on the idea first put forth by Henrik Kehlet in 1997, who stated that a shorter hospital stay for patients having colorectal surgery would result from early postoperative rehabilitation.¹⁷ A study illustrated Even though the National Surgical Quality Improvement Program projected a longer stay (pre-ERAS 2.0 compared with post-ERAS 2.5 days; $P=.009$), the median length of stay was significantly shorter in the ERAS complete group after implementation (3.0 compared with 2.0 days; $P=.007$). Prior to ERAS, the actual median length of stay was 1 day longer than the median length of stay predicted by the National Surgical Quality Improvement Program; however, after ERAS, the actual median length of stay was 0.5 days shorter than the predicted length of stay, translating to a 1.5-day reduction in the adjusted length of stay.¹⁶ Similar results were obtained from subset study of gynecologic oncology patients (96 historical controls and 45 ERAS full). Although both pre-ERAS and ERAS patients had median lengths of stay of 3.0 days, most ERAS patients had shorter stays. Even though the median length of stay anticipated by the National Surgical Quality Improvement Program increased by 1.3 days, the mean length of stay for pre-ERAS and ERAS patients was 3.68 days compared to 3.00 days, respectively ($P=.02$).¹⁶ An ERAS pathway was introduced between 2014 and 2016 at a single facility in the United States of

America, according to a study. This study compared patients enrolled in an ERAS program to patients receiving standard care in the six months prior to ERAS deployment. All consecutive patients undergoing open gynecologic surgery were included. More than 80% of the included 607 individuals were diagnosed with cancer. According to this study, the median length of stay decreased from 4 days before ERAS to 3 days after its deployment.¹⁸ Bisch and associates presented the outcomes of using ERAS at two sites of gynecologic oncology in Alberta, Canada, in 2018. In this 519 patient trial, the median duration of stay was reduced from 4.0 days prior to intervention to 3.0 days following the installation of ERAS. The patients were undergoing open surgery for suspected or proven gynecologic cancer. Low-complexity surgery showed a median length of stay reduction of 1 day, from 3.0 days before to ERAS deployment to 2.0 days after ERAS implementation. With a decrease in median length of stay from 5.0 days to 3.0 days following medium/high complexity surgery, the improvement in length of stay was even more noticeable.¹⁹

Complications

Postoperative complications of surgery include acute urine retention, acute disorientation, nausea, and vomiting, as well as postoperative fever, secondary bleeding, atelectasis, pneumonia, wound infection, embolism, and deep vein thrombosis. Re-admission rates for infections, wound dehiscence, and bowel dysfunction.²⁰ Studies have shown, statistically significant decrease in the rate of complications in the laparotomy groups. however, this decrease did not achieve statistical significance in the laparoscopy groups. These results were consistent with earlier data that showed a considerable decline in postoperative morbidity and a tendency toward lower mortality in individuals undergoing ERAS. A meta-analysis compared ERAS routes to traditional postoperative treatment and included 2376 colorectal patients from 16 randomized controlled studies. A considerable decrease in overall morbidity and medical problems was achieved by ERAS pathways.²¹ After the application of ERAS procedures in gynecologic oncology, there was a statistically significant reduction in the odds of complication following surgery of 32%, according to a meta-analysis of the 21 studies reporting complications in gynecologic oncology. These studies included 4974 patients.²² Additionally, ERAS cohorts showed a 20% reduction in the likelihood of readmission during the first 30 days following surgery when compared to standard care.²³

Cost

Research revealed Based on actual expenses and specific expenditures associated with ERAS implementation, the ERAS program in gynecologic surgery resulted in a \$4381 per patient reduction in overall costs. Three years following implementation, total expenditures kept dropping.²³ According to a study, Alberta's ERAS multiguide adoption reduces costs. Findings also demonstrate the necessity of taking into account a wide variety of health care use, long-term effects, economies of scale, productive efficiency, and allocative efficiency for sustainability, scalability, and expansion of ERAS implementations in order to provide a superior Return on Investment.²⁴

Pain And Use Of Opioids:

In line with previous research on the management of acute pain during obstetrics and gynecology operations as well as non-obstetrics and gynecology procedures, which showed that multimodal analgesia is linked to superior pain alleviation and reduced opioid use.^{25,26} A study discovered that the post-ERAS adoption of multimodal analgesia use was related with a considerable, almost 50% decrease in the inpatient morphine milligram equivalents of opioid exposure. Patients' ratings of acceptable pain increased as a result of these modifications to pain management. Using oral opioids for analgesia after cesarean delivery was recently reduced from 68% to 40% as a result of a quality improvement initiative. There was no difference in patient satisfaction or pain relief, and the number of opioid prescriptions given out at hospital discharge also decreased.²⁷ ERAS protocols, including gynecologic oncology, have shown benefits in opioid use across a number of disciplines. In their study of opioid usage and important patient-reported outcomes in gynecologic oncology patients, Meyer and colleagues discovered a 72% decrease in median opioid use.¹⁸ This study also showed that 16% of patients were able to avoid using opioids up until postoperative day 3 without experiencing appreciable variations in pain levels.¹⁸

Patient Satisfaction

High levels of patient satisfaction were seen in both the laparotomy and laparoscopy groups in one study. This could be attributable to a

multidisciplinary strategy that places a major emphasis on discharge planning, explicitly addressing important areas of recovery from initial consultation. The paper shows how successfully a gynecological oncology surgical unit implemented an ERAS methodology.²⁸ According to a study, In gynecological oncology surgery, the introduction of the ERAS program was linked to high patient satisfaction. Patient satisfaction with the ERAS program was 8.9 out of 10.²⁹

CONCLUSION

Fast-evolving and being adopted by practically all surgical specialties are evidence-based ERAS routes. ERAS implementation, including postoperative pain, readmission rates, and patient satisfaction, demonstrated a clinically significant improvement in postoperative patient recovery. To make more robust, comprehensive recommendations about the use of ERAS protocols in all gynecologic surgeries, additional research is required.

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