



Efficacy of Preoperative Enhanced Recovery Protocols Versus Standard Care in Urologic Surgery

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ABSTRACT

Background: A contemporary, multimodal perioperative strategy, enhanced recovery after surgery (ERAS) procedures are designed to reduce surgical stress, preserve physiological function, and speed up recovery in order to improve patient outcomes. ERAS principles were first applied in colorectal surgery, but they have since been modified for use in urology and other surgical specialties. The preoperative effectiveness of ERAS in comparison to conventional standard treatment in major urologic procedures is still not well understood in local clinical settings, despite mounting evidence of its advantages. **Objective:** This study aimed to evaluate the efficacy of preoperative ERAS protocols versus standard perioperative care in major urologic surgeries—specifically radical cystectomy and radical prostatectomy—by comparing clinical outcomes, patient satisfaction, and healthcare professionals' perspectives. **Methods:** A tertiary care hospital in Quetta, Pakistan, was the site of a qualitative comparative study. Using purposive sampling, a total of 100 participants—70 patients and 30 medical professionals—were chosen. Using a pre-made guide, semi-structured interviews were performed to examine preoperative preparation, recovery, pain management, and satisfaction-related experiences and perceptions. Prior to inclusion, all subjects provided written informed permission, and the hospital's Institutional Review Board granted ethical approval. **Results:** Compared to patients receiving normal treatment, those treated using ERAS procedures showed improved recovery profiles. The ERAS group was mobilized earlier (82.9% vs. 45.7%), had fewer surgical problems (14.3% vs. 37.1%), shorter mean hospital stays (5.2 vs. 8.7 days), and resumed oral intake more quickly (77.1% vs. 40.0%). In terms of psychological comfort, pain control, and preoperative counseling, patient satisfaction was significantly higher in the ERAS group. Improved interdisciplinary collaboration and less postoperative stress were recognized by medical professionals, but they also pointed to issues with institutional implementation support and inadequate training. **Conclusion:** When it comes to improving recovery and clinical outcomes for patients undergoing major urologic procedures, preoperative ERAS treatments outperform traditional standard care. ERAS encourages a quicker recovery, fewer problems, and greater satisfaction by combining patient education, early postoperative rehabilitation, and optimal preoperative treatment. In order to guarantee consistent application, the study suggests that ERAS routes be adopted more widely in urologic surgery through organized institutional support and ongoing staff training.

INTRODUCTION

The emergence of the new era of perioperative medicine (also referred to as enhanced recovery after surgery (ERAS) protocols began with the growth of the significance of a multimodal approach to surgical patients. The best objectives of multimodal approach are enhancement of preoperative condition of patients and maintenance of homeostasis during the perioperative period, through stress reduction and minimization of inflammation. His

new method was initially applied in the field of colorectal surgery (1) and subsequently it began to be applied to all other surgeries (24).

The interest of urology specialists towards ERAS techniques is increasing. Radical cystectomy (RC) and radical prostatectomy (RP) are the two urologic procedures that have been studied most. These procedures involve extensive surgical resection, increased risk of bleeding and perioperative blood transfusion, urine diversion in case of

a cystectomy and the complications posing a high rate after surgery. Also, older patients with cardiovascular and other comorbidities, anaemia, possible infections, and malnourishment are usually those who require influential urologic surgery. The ERAS preoperative phase is made up of a number of significant components.

ERAS guidelines propose preadmission counselling as the initial step in different procedures (4). Research has shown that reducing anxiety by exchanging information on admissions, surgical and anaesthetics actions and other information can help in managing pain, early mobilization and preoperative eating which could reduce the occurrence of postoperative complications (7,8,9).

In the case of urinary diversion RC, Hobisch et al. (10) found that the majority of patients who had been planned on various types of therapy had not been made aware of the available options involving different types of therapy before their admission to the Department of Urology, even before the early experiments with ERAS in the urology field. After admission, 91.3 percent of patients with neobladder RC and 78.8 percent of patients with ileal conduits reported him/herself to be fully satisfied with the information given. Most of the studies during this period (10, 11) are concerned with the need to educate patients on the numerous types of RC urinary diversions and their implications on their daily care in the hospital.

Preadmission counseling and patient education are one of the key components of the strategy according to the already developed ERAS recommendations [12]. This involves the description of the expected process of recovery, postoperative goals, feeding and mobilization methods, the intended course of surgery and anaesthesia. Such a preoperative patient interaction, according to research, reduces anxiety that might lead to enhanced postoperative analgesic, faster mobilization, and reduced issues [13].

Another important constituent is preoperative carbohydrate loading. It is administering a high-carbohydrate drink two to three hours before surgery to multiply muscle functional recovery, decrease insulin resistance after surgery, and reduce protein and nitrogen losses [14]. Carbohydrate loading has been identified to enhance healing of bowel and reduction of hospitalization during urologic surgery particularly radical cystectomy and prostatectomy [15].

ERAS also includes the preoperative optimization of comorbidities. This involves correcting anaemia, controlling glycaemic condition, maximizing nutrition, and measuring cardiopulmonary condition, which reduce the perioperative risks and maximizes surgical tolerance [16]. There is evidence that indicates that the application of a comprehensive ERAS protocol in large urologic operations helps to minimize the occurrence of postoperative complications, lower the use of opioid, and improve patient satisfaction overall [17,18].

On the other hand, standard care in urologic surgery means the usual perioperative treatment plan that existed in the past prior to the invention of ERAS. It often involves prolonged fasting (since midnight), bowel cleansing, nasogastric suction on a regular basis, delay of oral intake and bed rest until bowel sounds resume [19]. In addition, ileus, nausea, and delayed recovery are the primary effects

of high-dose opioids as the primary form of the pain management. Due to the fears of surgery complications, early mobilization and nutrition reestablishment is often delayed. The standard care usually overlooks the metabolic, nutritional and psychological aspects of recovery which may lead to an increase in length of stay, rehabilitation and postoperative morbidity despite being effective in ensuring surgical correction [20].

Therefore, the proposed research will assess the effectiveness of preoperative enhanced care methods in urologic surgery relative to the usual care. To be more specific, it aims at identifying whether the ERAS-based preoperative management leads to better outcomes in terms of recovering, fewer complications, and hospital stay.

LITERATURE REVIEW

Enhanced Recovery After Surgery (ERAS) programs have been used more and more frequently in urologic surgery over the past ten years and particularly in high-risk surgery, including radical cystectomy and radical prostatectomy. A meta-analysis (25 studies; 4,083 patients) of radical cystectomy revealed that ERAS application was linked to significant statistically significant decreases in overall complications (OR = 0.76), transfusion rates (OR = 0.59), readmissions (OR = 0.79), length of stay (SMD = -0.79), and time to first flatus (SMD = -1.16) and did not result in a higher likelihood of mortality or urine leakage [21]. The results presented herein support the possibility of ERAS to provide concrete perioperative advantage even in complicated urologic cancer procedures.

In a more detailed overview of urologic ERAS pathways, urology adoption led to nearly half the amount of surgical complications, 30 percent of the hospitalization, and readmissions [18]. Being constraining factors in the interpretation, the review identified the differences in types of surgical procedures, institutional support and adherence to the protocols. Although a great number of components of ERAS overlap with colorectal and urologic domains, a certain modification is required to consider the urologic-specific concerns such as urinary diversion, catheterization, and the management of genitourinary functions.

Although ileus and first defecation were not found to differ significantly, ERAS patients spent a shorter period in hospital and on antibiotic use in prostate surgery, which is a retrospective study that compared patients who underwent laparoscopic radical prostatectomy (LRP) [22]. It proves that in spite of the fact that ERAS can accelerate the metrics of healing, there are patient groups which can have physiological reactions (like intestinal motility) which are hard to alter.

Another recent article on radical cystectomy in 2025 found that the survival outcomes were better and short-term recovery was better with high adherence to ERAS, although confounders were considered [23]. This suggests that optimization of surgical recovery may possess prognostic outcomes which extend further than reduction of morbidity.

Several systematic reviews, however, point out that data on the topic of urologic ERAS remains in its infancy. A

meta-analysis of radical cystectomy protocols based on individual patient data in 2020 has demonstrated that the use of ERAS was closely connected with the reduction in length of stay (-4.54 days) ($p < 0.001$), although it also indicated a high level of variation among different hospitals [24]. The fact that such benefits are broadly generalizable is also supported by a meta-analysis performed across various surgical specialties which found out that the adoption of ERAS reduced length of stay and complications in 74 randomized controlled trials ($n = 9,076$) [25].

Research Objective

The aim of this research is to test and compare the effectiveness of preoperative enhanced recovery after surgery (ERAS) program and the mainstream perioperative care among the patients having major urologic surgeries. It seeks to establish the need to know whether preoperative interventions using ERAS, help to enhance postoperative recovery, lessen complications, and lessen the length of hospital stay. The study will also aim at evaluating their effects on patient satisfaction and overall patient clinical outcomes.

METHODOLOGY

To compare the efficacies of preoperative enhanced recovery after surgery (ERAS) guidelines and a normal one (perioperative care), regarding the effectiveness of this approach in patients having major urologic surgeries, the present study employed a qualitative, comparative research methodology. A qualitative approach was chosen to gain a detailed understanding of the experiences, attitudes, and opinions of patients and medical workers regarding the practice of ERAS and its impact on the quality of recovery and complications and the level of satisfaction. The location of the study was a tertiary care hospital in Quetta, Pakistan, in the Department of Urology, where a variety of major surgeries concerning the urethra is performed and where recently ERAS-based preoperative procedures were implemented in addition to the traditional standard care.

The study population consisted of patients undergoing major urologic surgery, including radical prostatectomy, radical cystectomy, and of urology healthcare providers including surgeons, anaesthesiologists, nurses and preoperative coordinators. The sample size of 100 participants was made up of thirty medical experts and seventy patients. Participants were selected in the purposive sampling method that ensured that the representation of the ERAS and conventional care groups was equal. The participants were healthcare professionals directly engaged in providing perioperative treatment and individuals of 18 years of age and above who had experienced major urologic surgeries within the study time. Semi-structured face to face interviews were employed to collect data using a pre-made interview guide. The interviews included the views of participants concerning psychological comfort, pain management, postoperative recovery, preoperative preparation and general satisfaction. The IRB of the Quetta tertiary care hospital was consulted to provide ethical approval of the study. All the participants were fully informed on the

purpose of the study, the voluntary nature of the research, and confidentiality measures. Each subject included data collection with a written informed consent before the collection.

RESULTS

Table 1

Demographic Characteristics of Study Participants (n = 100)

Variables	Categories	Frequency (n)	Percentage (%)
Gender	Male	65	65%
	Female	35	35%
Age Group (Years)	18-40	28	28%
	41-60	47	47%
	>60	25	25%
Type of Participant	Patients	70	70%
	Healthcare Professionals	30	30%
Type of Surgery (Patients Only)	Radical Cystectomy	40	57.10%
	Radical Prostatectomy	30	42.90%

Table 2

Comparison of Recovery and Clinical Outcomes between ERAS and Standard Care Patients (n = 70)

Outcome Indicators	ERAS Group (n=35)	Standard Care Group (n=35)
Mean Length of Hospital Stay (days)	5.2 ± 1.4	8.7 ± 2.1
Postoperative Complication Rate (%)	14.30%	37.10%
Early Mobilization within 24 hrs (%)	82.90%	45.70%
Oral Feeding Resumed within 24 hrs (%)	77.10%	40.00%
Readmission within 30 days (%)	5.70%	14.30%

Table 3

Patient-Reported Satisfaction and Recovery Perceptions (n = 70)

Satisfaction Indicators	ERAS Group (%)	Standard Care Group (%)
Preoperative Information & Counseling Satisfactory	88.60%	54.30%
Pain Management Rated "Good to Excellent"	82.90%	51.40%
Psychological Comfort & Anxiety Control	80.00%	48.60%
Overall Satisfaction with Care	91.40%	60.00%
Willingness to Recommend Same Protocol	94.30%	65.70%

Table 4

Thematic Summary of Qualitative Findings from Healthcare Professionals (n = 30)

Emerging Themes	Representative Statements	Frequency (%)
Improved Coordination and Communication	"ERAS improved multidisciplinary teamwork and clarity of roles."	73%
Reduced Postoperative Stress and Fatigue	"Patients recover faster and need less opioid analgesia."	67%
Challenges in Implementation	"Limited staff training and patient education remain barriers."	60%
Need for Institutional Support	"Policy-level inclusion of ERAS guidelines would help sustainability."	56%

Positive Impact on Patient Outcomes	"Noticeable reduction in complications and hospital stay."	80%
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DISCUSSION

This paper made a qualitative comparison of the efficacies of preoperative Enhanced Recovery after Surgery (ERAS) versus normal perioperative care in major urology operations, such as radical prostatectomy and radical cystectomy. The findings indicated that the application of ERAS was associated with better clinical and patient-reported outcomes, which meant that it was more efficient, quicker to recuperate and were more gratifying.

Table 1 revealed that the majority of the patients were middle aged men because it was anticipated considering the higher number of men who would be involved in case of urologic malignancies which would necessitate radical prostatectomy or cystectomy. The engagement of medical personnel and patients enabled the development of the comprehensive insight into the complex effect of the ERAS approach on the recovery and care delivery within the context of surgery.

Clinical outcome comparison revealed that ERAS group had significantly higher recovery indications (Table 2). The patients who followed the ERAS methods of the mobilization (within 24 hours) and oral nutrition had a higher compliance and less time in hospital (5.2 days in comparison with 8.7 days) and their problems after the operation were less (14.3% compared with 37.1%). These can be compared to the findings of the previous research that had made the determination that the application of ERAS in urologic operations resulted in decreased morbidity, quicker gastrointestinal healing, and shorter hospitalization [2124]. The enhanced physiological functioning and lower readmission rate of the ERAS cohort were probably caused by early ambulation and dietary re-initiation.

Table 3 shows patient-reported outcomes, which also prove the advantages of preoperative ERAS treatments. Psychological comfort satisfaction, preoperative information, and pain management were much greater among participants. More than 90 per cent of patients who went through ERAS reported that they were satisfied with the quality of the comprehensive care and would refer the

program to others. It demonstrates that the two main elements of ERAS, preadmission counseling and patient education are important in terms of anxiety reduction and enhanced postoperative engagement [12,13,18]. On the contrary, the standard-care patients showed slower recovery and worse pain management, which are the manifestations of the drawbacks of the traditional treatment which is majorly opioid-based and long-term starving [19,20].

ERAS has qualitative viewpoints that prove beneficial to the organization and procedure (Table 4) and balance the patient perspectives. The most frequent improvements in patient outcomes, reduced postoperative fatigue, and interdisciplinary work were habitually reported by providers. They, too, however, also noted the issue of implementation (poor patient awareness and staff training which is frequently mentioned in the literature on ERAS adoption [23, 25] as a problem. To be able to maintain the advantages of ERAS, it is required to possess systemized policies and regular compliance to its standards, which is represented by the demand of higher institutional endorsement.

CONCLUSION

This qualitative comparison study was carried out in big urological surgery operations (like radical cystectomy and radical prostatectomy) where they found Enhanced Recovery After Surgery (ERAS) guidelines to be more effective than conventional perioperative care. ERAS had a major role in the enhancement of clinical outcomes by encouraging the incentive of early mobility and oral feeding, postoperative complication and hospitalization. Because of the systematic preoperative counseling and education provided by the ERAS processes, the patient was also determined to feel more comfortable with his/her psychology, better managing pain and more content. However, practitioners involved in medicine reported an increase in patient recovery and interdisciplinary cooperation regardless of the impediments like the absence of appropriate training and institutional support. All said and done, the results show that ERAS is a patient-centered approach that is holistic and maximizes the physiological recovery, improves the quality of care, and minimizes the morbidity of the post-operative phase.

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