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Original article

Are we doing "better"? The discrepancy between perception and practice of enhanced recovery after cystectomy principles among urologic oncologists

Janet E. Baack Kukreja, M.D., M.P.H.[a,*], Edward M. Messing, M.D.[a], Jay B. Shah, M.D., M.S.[b]

[a] *Department of Urology, University of Rochester Medical Center, Rochester, NY*
[b] *Department of Urology, M.D. Anderson Cancer Center, Houston, TX*

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Abstract

Purpose: The concept of enhanced recovery after surgery has been around since the 1990s when it was first introduced as a means to improve postoperative recovery of general surgical patients. In the field of urology, the uptake of enhanced recovery pathways has been slow for unclear reasons. Recently, interest in enhanced recovery after cystectomy (ERAC) has been increasing, but the current urologic oncology practice patterns remain unclear. In this study, we investigate modern perioperative patterns of care and rates of application of ERAC principles by cystectomy surgeons.

Materials and methods: ERAC principles were identified by reviewing urology and general surgery literature. An adapted version of The Royal College of Surgeons of England fast-track surgical principles survey was used. Preoperative education, bowel preparation avoidance, nasogastric tubes avoidance, normothermia, opioid avoidance, early ambulation, and early feeding were all practices queried with the survey. Surveys were distributed electronically to faculty of Society of Urologic Oncology fellowships with bladder cancer as a special area of interest. Additional participants were identified by recent publications on cystectomies for bladder cancer. In total, 128 surveys were e-mailed to the previously identified experts. Of these, 61 (48%) completed the survey. Responses were classified as congruent with commonly accepted ERAC principles (ERAC group) or noncongruent (non-ERAC group). Chi-square test was used for categorical variables and Wilcoxon-Mann-Whitney for ordinal variables.

Results: Of the urologists who classified themselves in the ERAC group (64%), the average length of stay was reported to be 6.1 days and 7.2 days in the non-ERAC group ($P = 0.02$). Only 20% were practicing all interventions. Among the ERAC surgeons 1, 2 or 3 of the interventions were omitted by 13%, 25%, and 23% of the respondents, respectively. Significant differences were found between the self-reported ERAC adopters and nonadopters in the use of bowel preparation ($P = 0.01$), nasogastric tubes ($P = 0.007$), alvimopan ($P < 0.001$), and the average day of advancement to clear liquids ($P < 0.001$). There were no differences in postoperative ambulation and opiate or nonsteroidal anti-inflammatory drug use. Lack of convincing evidence was cited as the main reason for the non-ERAC group not yet implementing an ERAC pathway followed by lack of resource availability.

Conclusion: Urologists who consider themselves as practicing ERAC do not universally practice all of the pathway tenets. A significant gap exists between self-perception and practice of enhanced recovery. ERAC implementation is challenging but represents a significant opportunity to improve the quality of care for cystectomy patients.

Keywords: Cystectomy; Enhanced recovery after surgery; Quality improvement; Fast track; Survey

1. Introduction

Radical cystectomy continues to have the highest morbidity and mortality of commonly performed urologic procedures [1]. Length of stay from the National Surgical Quality Improvement Program database is reported to be an average of 10.75 days for radical cystectomies performed between 2006 and 2011 [1]. The length of stay after a radical cystectomy is often prolonged secondary to bowel complications, most notably ileus [2].

The concept of enhanced recovery after surgery (ERAS) was first introduced in the 1990s as a means to improve

* Corresponding author. Tel.: +1-585-275-3343; fax: +1-585-273-1068.
E-mail address: Janet_kukreja@urmc.rochester.edu (J.E. Baack Kukreja).

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postoperative recovery of general surgical patients [3]. ERAS concepts include preoperative counseling and education, preoperative medical optimization, bowel preparation omission, carbohydrate loading, limited preoperative fast, avoidance of long acting sedatives preoperatively, venous thromboembolism prophylaxis, epidural analgesia, minimally invasive approaches when feasible, resection site drainage omission, antimicrobial prophylaxis, standard anesthetic protocol, goal-directed perioperative fluid management, prevention of intraoperative hypothermia, avoidance of nasogastric tubes, prevention of nausea and vomiting, prevention of postoperative ileus, early mobilization, early diet, and auditing of compliance with the protocol [4,5]. Implementation of ERAS led to improvements in both length of stay and quality of care in the general surgery population.

Enhanced recovery after cystectomy (ERAC) modifies some of the colorectal concepts, including not necessitating use of minimally invasive techniques and allowing drains including intra-abdominal closed suction drainage, ureteral stents, and transurethral catheters in neobladders. Although good evidence exists for the use of ERAS in colorectal surgery, urologists have been slow to embrace the concept of enhanced recovery owing to lack of high-level evidence in cystectomy patients [4]. Recently, interest in ERAC has been increasing, but current practice patterns remain unclear and ERAC may be underutilized [6]. In this study, we investigated modern perioperative patterns of care and rates of application of ERAC principles by cystectomy surgeons along with reasons for lack of implementation.

2. Methods

ERAC principles were identified by reviewing urology and general surgery literature. An adapted version of The Royal College of Surgeons of England fast-track surgical principles survey was used [7]. The ERAC principles surveyed were divided into the 3 perioperative phases of care: preoperative, intraoperative, and postoperative. The items surveyed were thought to be the most commonly accepted principles by urologists. Items not surveyed were part of the traditional colorectal surgery ERAS, these included the use of minimally invasive techniques and sparing of drains. These practices were thought to be inapplicable to ERAC at this time because of lack of evidence to support these practices in cystectomy patients. Preoperative items surveyed were the use of preoperative education, preoperative medical and social assessment, ostomy nurse involvement, bowel preparation avoidance, and prolonged fast avoidance. Maintenance of normothermia was used as assessment for an intraoperative ERAC principle. Postoperative principles surveyed were the avoidance of nasogastric tubes, gastrointestinal medications administered, opioid avoidance, early ambulation, and early feeding (Survey can be seen in Appendix A). Surveys were distributed electronically via SurveyMonkey in July and September 2014 to faculty of the Society of Urologic Oncology fellowships with bladder cancer as a special area of interest [8]. Additional participants were identified by recent United States publications using the English language on cystectomies for bladder cancer in the last 2 years.

In total, 128 surveys were delivered electronically from SurveyMonkey via e-mail to the previously identified experts. Of these, 61 (48%) completed the survey. The group's responses were classified as congruent with commonly accepted ERAC principles (ERAC group) or noncongruent (non-ERAC group) based on urologist self classification.

Statistical analysis was done using SAS 9.2. Categorical variables were analyzed using the chi-square or the Fischer exact tests. Ordinal variables were analyzed using the Wilcoxon-Mann-Whitney test.

3. Results

Urologist demographics between the 2 groups did not vary significantly (Table). Of the urologists that responded, 64% classified themselves in the ERAC group. The average

Table
Basic demographics of the urologist responding to the survey. Cystectomy practices with volume and modality. Urologist demographics by ERAC participation.

	ERAC						Non-ERAC					
Number (%)	39 (63.9)						22 (36.1)					
On average how many cystectomies do you perform per year, n (%)	5–10	11–20	21–30	>30			5–10	11–20	21–30	>30		
	1 (2.6)	9 (23.1)	5 (12.8)	24 (61.5)			2 (9.1)	2 (9.1)	6 (27.3)	12 (54.6)		
What is the break down approximately of the modality of cystectomies you perform?	<25%	25–50%	50%	50–75%	>75%	100%	<25%	25–50%	50%	50–75%	>75%	100%
Robot assisted Laparoscopic, *n* (%)	8 (29.6)	7 (25.9)	2 (7.4)	4 (14.8)	3 (11.1)	3 (11.1)	7 (53.9)	1 (7.7)	1 (7.7)	1 (7.7)	3 (23.1)	0
Open, *n* (%)	2 (5.6)	4 (11.8)	2 (5.9)	7 (20.6)	6 (17.7)	13 (38.2)	1 (4.8)	2 (9.5)	1 (4.8)	1 (4.8)	6 (28.6)	10 (47.6)