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Addressing a Common Complication After Ileostomy Creation: A Multidisciplinary Program to Decrease Readmission for Dehydration

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Abstract

Objective: To evaluate the impact of a multidisciplinary program on dehydration risk after ileostomy creation.

Background: Dehydration after ileostomy creation is a significant complication and the most common reason for readmission. We implemented a multidisciplinary program to address this problem, including improved perioperative education and increasing Wound Ostomy and Continence Nurse (WOCN) support.

Methods: We queried patients who underwent ileostomy creation from 2010-2019. We evaluated patient characteristics (including sex, age, comorbidities), operative characteristics (including approach, class, duration, estimated blood loss), and perioperative characteristics (including WOCN consultation, antimotility agents, ileostomy output, Length of Stay [LOS], follow up, and adverse events). Primary outcome was 60-day readmission for dehydration. Univariate and multivariate logistic models were created to identify factors associated with dehydration.

Results: Nine hundred and ninety-eight patients underwent ileostomy creation, with a median LOS of 6 days. The readmission rate for dehydration was 5.4% (*vs*. 11.5% previously), with a median time to readmission of 8.5 days. Patients readmitted for dehydration had slightly higher ileostomy output prior to discharge (750 *vs*. 500 mL/24h) and later post-operative follow up (13 *vs*. 11 days). On multivariate analysis, risk factors associated with dehydration were diabetes ($p = 0.001$), open surgery ($p = 0.001$), adverse events ($p < 0.001$), and higher ileostomy output ($p = 0.004$).

Conclusions: Readmission for dehydration after ileostomy creation has significantly decreased with the implementation of a multidisciplinary program. A potential area of improvement is close follow up within 1 week for high-risk patients to identify and address early signs of dehydration.

Keywords: Ileostomy; Dehydration; Readmission

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Introduction

Significant dehydration requiring readmission is a common and potentially morbid complication after ileostomy creation [1-4]. We previously reported our experience at Memorial Sloan Kettering Cancer Center (MSKCC) in collaboration with Weill Cornell Medical College [5]. After ileostomy creation, the 60-day readmission rate was 28%, with a median time to readmission of 12 days post-discharge. The most common cause for readmission was dehydration (42%), for an overall readmission rate due to dehydration of 11.5% after new ileostomy creation. Dehydration was significantly associated with other complications, including acute renal failure, severe electrolyte derangements, cardiac arrhythmias, and failure to thrive. Patients readmitted for dehydration also had a higher likelihood of repeated readmissions and longer lengths of stay [5], highlighting the importance of avoiding the cascade effects of post-operative dehydration in patients undergoing new ileostomy creation.

Motivated by these findings, we subsequently established a multidisciplinary program at MSKCC to improve post-operative outcomes after new ileostomy creation. With collaboration from both inpatient and outpatient nurses, Wound Ostomy and Continence Nurses (WOCNs), advanced practice providers, case management, and surgery, we established comprehensive patient education

standards of care after new ostomy creation, setting guidelines for clinical assessment, clinician intervention, and patient and caregiver education milestones at each phase of the perioperative period [6]. In addition, we increased dedicated nursing resources, including increased WOCN staffing in the outpatient clinics (both at our main campus and newer regional facilities beginning in 2015), as well as standardized inpatient WOCN and bedside nursing assessment and education in the immediate post-operative period. We also established in parallel a colorectal Enhanced Recovery After Surgery (ERAS) program in 2016, focused on decreasing Length of Stay (LOS) and improving postoperative outcomes for all colorectal surgeries. In our previously published experience, we reported that increased adherence to ERAS metrics throughout the perioperative period was associated with decreased LOS, without increasing complication or readmission rates [7]. In particular, we found that colorectal patients who were discharged within 72 hours were less likely to be readmitted compared to those who remained hospitalized longer (readmission rate 4.4% *vs*. >10% for LOS ≥5 days), indicating that those patients who met clinical criteria for early discharge had improved outcomes [7].

Here we analyze the impact of these multidisciplinary interventions on post-operative outcomes for patients undergoing colorectal surgery with new ileostomy creation at a high-volume tertiary cancer center. We examined unplanned readmissions after ileostomy creation, stratified by reasons for readmission. Patients readmitted for dehydration were then compared to those who were not readmitted. We hypothesized that such subgroup analysis would help identify risk factors for dehydration to further improve perioperative care after new ileostomy creation.

Materials and Methods

Patients

We identified patients who underwent colorectal surgery with creation of new ileostomies at Memorial Sloan Kettering Cancer Center from 2010 - 2019. The total cohort was 998 patients. We evaluated 60-day readmissions post-discharge, excluding planned readmissions (e.g., elective ileostomy reversal).

We performed a retrospective analysis of a prospectively collected database. Patient characteristics were identified, including sex, smoking history, comorbidities, Body Mass Index (BMI), and American Society of Anesthesiologists (ASA) class. Operative characteristics were collected, including the type of operation (low anterior resection, segmental colectomy, subtotal or total abdominal colectomy, abdominoperineal resection or transanal excision, cytoreductive surgery, or small bowel resection, bypass, or ileostomy alone) and any secondary procedures (such as combined multivisceral resection with another surgical subspecialty). We also examined surgery class (elective, emergent, urgent), operative approach (Minimally Invasive [MIS] or open), stoma type (end *vs* loop), surgery duration, and estimated blood loss.

Perioperative characteristics included pre-operative and inpatient WOCN consults and a documented inpatient WOCN education consult in the post-operative period. We identified whether patients were discharged with antimotility agents, such as psyllium, loperamide, diphenoxylate/atropine, cholestyramine, and tincture of opium. We calculated ileostomy output in the 24-hour period prior to discharge and collected LOS and adverse events within 60 days.

The study was approved by the Institutional Review Board (MSKCC IRB # 16-1265).

Outcome measures

The primary outcome was the rate of unplanned readmission within 60 days of discharge. All causes for readmission were examined, but the primary focus of the analysis was on patients readmitted for dehydration. Patient, operative, and perioperative characteristics were analyzed to identify risk factors for readmission due to dehydration.

LOS was calculated as days between date of admission and date of discharge. Time to first post-operative appointment was calculated as days between date of discharge and date of first colorectal outpatient visit. Time to unplanned readmission was calculated as days between date of discharge and date of readmission. For patients readmitted for dehydration, 24-hour ileostomy output was calculated at the time of readmission. When available, we also examined creatinine (Cr) prior to discharge and at the time of readmission.

Statistical analysis

There were 998 patients in the overall study cohort. Patient, operative, and perioperative characteristics were summarized. The study cohort was then stratified by patients readmitted for dehydration, readmitted for other reasons, and not readmitted. To identify characteristics associated with patients being readmitted for dehydration, we compared patients admitted for dehydration *vs* patients not admitted, reducing the initial study cohort to 880 patients. Fifty-four patients were readmitted for dehydration.

Patient, operative, and perioperative characteristics for patients readmitted for dehydration *vs* patients not readmitted were summarized utilizing median and Interquartile Range (I.Q.R.) for continuous variables and frequency and percentages for categorical variables. Comparisons between continuous variables utilized the Wilcoxon rank sum test, and comparisons between categorical variables utilized Fisher's exact test. P-values were provided for these comparisons and were deemed statistically significant when $p < 0.05$.

Univariate and multivariate logistic models were built to investigate which patient characteristics were associated with readmission for dehydration. A multivariate model was built utilizing covariates that were statistically significant in the univariate setting (Supplemental Table 1). Due to the number of coefficients in the model violating the general rule of thumb that there should be 10 events for every coefficient in the model, a backwards model selection was utilized to come to a final model.

All analyses were conducted using R version 4.3.3 with the tidyverse (v2.0.0) and gtsummary (v1.7.2) packages [8-10].

Results

Overall patient population

Nine hundred and ninety-eight patients underwent ileostomy creation at MSKCC during this period. Overall patient, operative, and perioperative characteristics were as described (Tables 1-3). Most cases were elective; 66% were performed minimally invasively. The most common procedure for new ileostomy creation was a low anterior resection (72.5%). Thirty-two percent of patients had an additional secondary procedure, such as a combined multivisceral resection with another surgical subspecialty (Table 2).

Overall, 13.2% of patients were discharged with an antimotility agent (Table 3). The most common were loperamide (7.7%) and

Table 1: Patient characteristics, overall.

Characteristic	All patients (n = 998)	Readmitted, dehydration (n = 54)	Readmitted, other cause (n = 118)	Not Readmitted (n = 826)
Age	54 (47, 64)	60 (51, 67)	54 (47, 65)	54 (47, 64)
Sex				
F	407 (40.8%)	19 (35.2%)	43 (36.4%)	345 (41.8%)
M	591 (49.2%)	35 (64.8%)	75 (63.6%)	481 (58.2%)
Smoking	454 (45.5%)	34 (63.0)	65 (55.1%)	355 (43.0%)
Diabetes	150 (15.0%)	20 (37.0%)	14 (11.9%)	116 (14.0%)
Hypertension	344 (34.5%)	32 (59.3%)	45 (38.1%)	267 (32.3%)
Cardiovascular disease	32 (8.2%)	10 (18.5%)	11 (9.3%)	61 (7.4%)
Renal disease	25 (2.5%)	5.0 (9.26%)	9 (7.6%)	11 (1.3%)
BMI	27.1 (23.5, 30.7)	26.4 (22.2, 31.5)	26.9 (23.8, 31.3)	27.1 (23.5, 30.7)
ASA				
P1	3 (0.3%)	0 (0.0%)	2 (1.7%)	1 (0.1%)
P2	264 (26.5%)	13 (24.1%)	30 (25.4%)	221 (26.8%)
P3	683 (68.4%)	35 (64.8%)	78 (66.1%)	570 (69.0%)
P4	46 (4.6%)	6 (11.1%)	7 (5.9%)	33 (4.0%)
P5	2 (0.2%)	0 (0.0%)	1 (0.9%)	1 (0.1%)

Median (IQR); n (%)
BMI: Body Mass Index; ASA: American Society of Anesthesiologists class

Table 2: Operative characteristics, overall.

Characteristic	All patients (n = 998)	Readmitted, dehydration (n = 54)	Readmitted, other cause (n = 118)	Not Readmitted (n = 826)
Surgery type				
Elective	947 (94.9%)	50 (92.6%)	105 (89.0%)	792 (95.9%)
Emergent	37 (3.7%)	2 (3.7%)	8 (6.8%)	27 (3.3%)
Urgent	14 (1.4%)	2 (3.7%)	5 (4.2%)	7 (0.9%)
Operative approach				
Minimally invasive	659 (66.0%)	26 (48.2%)	66 (55.9%)	567 (68.6%)
Open	339 (34.0%)	28 (51.9%)	52 (44.1%)	259 (31.4%)
Ileostomy type				
End	132 (13.2%)	4 (7.4%)	27 (22.9%)	101 (12.2%)
Loop	866 (86.8%)	50 (92.6%)	91 (77.1%)	725 (87.8%)
Primary colorectal procedure				
Low anterior resection	724 (72.5%)	32 (59.3%)	72 (61.0%)	620 (75.1%)
Segmental colectomy	16 (1.6%)	2 (3.7%)	3 (2.5%)	11 (1.3%)
Subtotal or total abdominal colectomy	112 (11.2%)	6 (11.1%)	21 (17.8%)	85 (10.3%)
Abdominoperineal resection or transanal excision	10 (1.0%)	2 (3.7%)	0 (0.0%)	8 (1.0%)
Cytoreductive surgery	22 (2.2%)	2 (3.7%)	3 (2.5%)	17 (2.1%)
Small bowel resection, bypass, or ileostomy alone	114 (11.4%)	10 (18.5%)	19 (16.1%)	85 (10.3%)
Secondary procedure				
Yes	319 (32.0%)	14 (25.9%)	35 (29.7%)	270 (32.7%)
No	679 (68%)	40 (74.1%)	83 (70.3%)	556 (67.3%)
Estimated blood loss (mL)	100 (50, 250)	150 (50, 350)	150 (50, 300)	100 (50, 250)
Surgery duration (minutes)	301 (216, 400)	271 (173, 381)	308 (213, 439)	301 (219, 398)

Median (IQR); n (%)

psyllium (3.7%). Median ileostomy output in the 24 hours prior to discharge was 500 mL. When collected, median Cr prior to discharge was 0.9; though as per our ERAS protocol, post-operative labs were not routinely drawn unless clinically indicated.

Median LOS for all patients was 6 days (Table 3). Patients who were readmitted for dehydration had initial median LOS of 7.5 days [I.Q.R. 5.0, 13.0], *vs* 7 days [5.0, 12.0] for patients readmitted for other reasons. Patients who were not readmitted within 60 days had a LOS

Table 3: Perioperative characteristics, overall.

Characteristic	All patients (n = 998)	Readmitted, dehydration (n = 54)	Readmitted, other cause (n = 118)	Not Readmitted (n = 826)
Surgery type				
Elective	947 (94.9%)	50 (92.6%)	105 (89.0%)	792 (95.9%)
Emergent	37 (3.7%)	2 (3.7%)	8 (6.8%)	27 (3.3%)
Urgent	14 (1.4%)	2 (3.7%)	5 (4.2%)	7 (0.9%)
Operative approach				
Minimally invasive	659 (66.0%)	26 (48.2%)	66 (55.9%)	567 (68.6%)
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Ileostomy type				
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Secondary procedure				
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Estimated blood loss (mL)	100 (50, 250)	150 (50, 350)	150 (50, 300)	100 (50, 250)
Surgery duration (minutes)	301 (216, 400)	271 (173, 381)	308 (213, 439)	301 (219, 398)

Median (IQR); n (%)
WOCN: Wound Ostomy and Continence Nurse

of 6 days [I.Q.R. 4.0, 8.0]. Overall, 82.5% of patients had no reported adverse events. Median time to post-operative appointment was 11 days. Of note, 14 patients (1.4%) did not have post-operative follow up at MSKCC. Three patients followed up at other institutions, and 11 died prior to the scheduled outpatient appointment.

The overall readmission rate was 17.2% (172/998 patients). Of the 172 patients readmitted, 54 were readmitted for dehydration (31.4%), for a final readmission rate due to dehydration of 5.4%. At the time of readmission, median 24-hour ileostomy output was 800 mL for those readmitted for dehydration and 400 mL for those readmitted for other reasons. Median Cr was 0.9 [I.Q.R. 0.7, 1.2] for those readmitted for dehydration and 0.7 [I.Q.R. 0.6, 0.9] for those readmitted for other reasons (Table 3).

Before and since 2015

While the multidisciplinary interventions to optimize perioperative stoma care and education were gradually implemented throughout this study period, there was a significant increase in WOCN staffing and related resources beginning in 2015. We therefore performed subgroup analysis for patients who underwent new ileostomy creation prior to and since 2015 (Supplemental Tables 2-4).

The overall patient and operative characteristics were similar (Supplemental Tables 2,3). We performed a descriptive comparison of perioperative outcomes (Supplemental Table 4). Only patients in the later group had documented pre-operative and inpatient WOCN consultations. Patients in the later cohort had shorter median LOS of 5 days [I.Q.R. 3, 9] as compared to 7 days [I.Q.R. 5, 9] in the earlier cohort, corresponding with establishment of our ERAS program in 2016 [7]. Patients in the later group also had earlier follow up, with a shorter median time to first post-operative visit of 9 days as compared to 13 days prior to 2015. Overall rates of readmission were lower in the later group, 14.9% *vs.* 20.4% prior to 2015. In the later group, the rate of readmission specifically for dehydration was 4.4% *vs.* 6.8% for patients prior to 2015.

Readmission for dehydration *vs.* no readmission

Patients readmitted for dehydration were compared to those who did not have an unplanned readmission within 60 days (Supplemental Tables 5-7). On univariate analysis, patient characteristics associated with readmission for dehydration were older age, active smoking, and comorbidities, including diabetes, hypertension, cardiovascular disease, and renal disease; there were no differences in sex, ASA class, or BMI (Table 4). Patients who underwent an open surgical approach also had higher rates of readmission for dehydration. There were no differences in surgery type (elective, emergent, or urgent), ileostomy type (end or loop), type of surgical procedure, presence of a secondary procedure, estimated blood loss, or surgical duration.

Patients readmitted for dehydration had slightly higher ileostomy output in the 24-hour period prior to discharge, with a median ileostomy output of 750 mL [I.Q.R. 473, 1205] *vs.* 500 mL [I.Q.R 250, 800] ($p < 0.001$) (Supplemental Table 7). Patients discharged with antimotility agents also had a higher likelihood of readmission for

Table 4: Univariate model, risk factors for readmission for dehydration.

Characteristic	O.R.	95% C.I.	*p*-value
Age	1.03	1.00, 1.05	0.02
Sex			0.3
F	—	—	
M	1.3	0.8, 2.4	
ASA (grouped)			0.12
P1 - 2	—	—	
P3	1.05	0.6, 2.1	
P4 - 5	3	1.0, 8.2	
Smoking	2.3	1.3, 4.1	0.004
Diabetes	3.6	2.0, 6.4	<0.001
Hypertension	3.1	1.8, 5.4	<0.001
Cardiovascular disease	2.9	1.3, 5.7	0.01
Renal disease	7.6	2.3, 21.7	0.002
BMI	1	0.9, 1.0	0.7
Surgery type			0.3
Elective	—	—	
Emergent	1.2	0.2, 4.1	
Urgent	4.5	0.7, 19.3	
Operative approach			0.003
Minimally invasive	—	—	
Open	2.4	1.4, 4.1	
Ileostomy type			0.3
End	—	—	
Loop	1.7	0.7, 5.9	
Primary colorectal procedure			0.13
Low anterior resection	—	—	
Segmental colectomy	3.5	0.5, 13.8	
Subtotal or total abdominal colectomy	1.4	0.5, 3.2	
Abdominoperineal resection or transanal excision	4.8	0.7, 20.3	
Cytoreductive surgery	2.3	0.4, 8.4	
Small bowel resection, bypass, or ileostomy alone	2.3	1.0, 4.7	
Secondary procedure			0.3
Yes	0.7	0.4, 1.3	
No	—	—	
Estimated blood loss (mL)	1	1.0, 1.0	0.7
Surgery duration (minutes)	1	1.0, 1.0	0.2
Pre-operative WOCN consult			0.6
Yes	0.8	0.5, 1.5	
No	—	—	
Inpatient WOCN Consult			0.6
Yes	0.9	0.5, 1.5	
No	—	—	
Discharged with any antimotility agent			0.03
Yes	2.2	1.1, 4.2	
No	—	—	
24-hour ileostomy output prior to discharge (mL)	2.7	1.7, 4.3	<0.001
Creatinine prior to discharge	1.4	0.8, 2.2	0.2
Length of stay (days)	1	1.0, 1.0	0.3
Adverse event (grade, grouped)			<0.001
0	—	—	
1	8.4	3.3, 19.7	
2	11.3	5.4, 22.8	
3-5	2.7	0.6, 8.3	
Time to post-operative appointment (days)	1	1.0, 1.0	0.05
Year			0.07
Before 2015	—	—	
Since 2015	0.6	0.3, 1.0	

O.R.: Odds Ratio; C.I.: Confidence Interval; BMI: Body Mass Index; ASA: American Society of Anesthesiologists class; WOCN: Wound Ostomy and Continence Nurse

Table 5: Multivariate model (backwards selected), risk factors for readmission for dehydration.

Characteristic	O.R.	95% C.I.	*p*-value
Smoking	1.8	0.9, 3.4	0.08
Diabetes	3.3	1.6, 6.8	0.001
Hypertension	1.7	0.9, 3.4	0.12
Operative approach			
Minimally invasive	—	—	
Open	2.3	1.2, 4.3	0.01
24-hour ileostomy output prior to discharge (mL)	2.3	1.3, 4.0	0.004
Adverse event (grade, grouped)			
0	—	—	
1	7.4	2.7, 18.8	<0.001
2	9.2	4.1, 20.1	<0.001
3-5	1	0.05, 5.2	>0.90

O.R.: Odds Ratio; C.I.: Confidence Interval

dehydration. Of patients readmitted for dehydration, 24.1% were initially discharged with antimotility agents *vs.* 12.5% for patients not readmitted (p = 0.02) (Supplemental Table 7), with an Odds Ratio (O.R.) 2.2 (p = 0.03) (Table 4). When serum Cr was collected, there was no difference in patients who were subsequently readmitted for dehydration *vs* though who were not (p = 0.20) (Table 4). Patients who experienced adverse events were more likely to be readmitted for dehydration (p < 0.001) (Table 4). There also appeared to be a trend towards significance for patients who were treated since 2015 having a lower rate of readmission for dehydration (O.R. 0.6, p = 0.07) (Table 4).

There was an association between later post-operative follow up and readmission for dehydration. Patients who were readmitted for dehydration had a median period of 13 days [I.Q.R. 6.0, 20.0] to their first post-operative appointment, *vs.* 11 days [I.Q.R. 6.0, 15.0] for patients who were not readmitted, with O.R. 1.02 (p = 0.05) (Table 4). The median time to readmission for dehydration was 8.5 days [I.Q.R. 5.0, 16.0] (Table 3).

On multivariate analysis (Table 5), risk factors significantly associated with readmission for dehydration were diabetes (O.R. 3.3, p = 0.001), an open surgical approach (O.R. 2.3, p = 0.01), adverse event (O.R. 7.4 for grade 1, O.R. 9.2 for grade 2, p < 0.001), and higher 24-hour ileostomy output prior to discharge (O.R. 2.3, p = 0.004).

Discussion

We previously reported that dehydration is a significant complication after new ileostomy creation and the most common cause for readmission [5]. In addition, dehydration is associated with other severe complications and increased likelihood of repeated readmissions [5], emphasizing the importance of identifying and avoiding post-operative dehydration in this patient population.

Since that publication, we established a multidisciplinary program to improve post-operative outcomes for patients undergoing new ileostomy creation at Memorial Sloan Kettering Cancer Center. Overall outcomes have improved, with an unplanned 60-day readmission rate of 17.2%, down from 28% previously [5]. In particular, dehydration risk after ileostomy creation significantly decreased, with an associated readmission rate of 5.4% in the overall study period and only 4.4% since 2015. This was as compared to 11.5% in our previously published experience [5]. Since 2015, patients also had earlier post-operative follow up. This suggests that shorter time to outpatient follow up in the more recent years may have helped prevent readmissions, with earlier identification of at-risk patients for targeted intervention. Patients who were readmitted for dehydration were also more likely to have been discharged with antimotility agents, indicating early efforts to control ileostomy output in those patients at risk, though this was not statistically significant on multivariate analysis. While patients who were readmitted for dehydration had higher ileostomy output prior to discharge, the overall volume (750 mL over 24 hours) was still lower than the clinically accepted goal of less than 1 liter in a 24-hour period, for which it is commonly agreed that most patients would maintain adequate oral hydration. Taken together, this suggests that overall, our multidisciplinary efforts have been successful at recognizing and treating patients with high ileostomy output in the immediate post-operative period. With regards to the 5% of ileostomy patients who were still readmitted for dehydration, we might therefore focus our efforts on closer monitoring of these high-risk patients in the outpatient setting.

Our data suggest that patients at risk for dehydration (diabetes, open surgical approach, adverse events, and/or ileostomy output >500 mL over 24 hours) should be targeted for early post-operative follow up. Our general practice had been a post-operative appointment within 2 weeks from discharge with both the surgical and WOCN teams. For patients readmitted for dehydration, their median time to post-operative visit was 13 days, as compared to 11 days for those not readmitted. In addition, the median time to readmission for dehydration was 8.5 days (*i.e.,* prior to the first post-operative visit). This suggests these high-risk patients should have earlier follow up, perhaps within 1 week. As resources at most institutions might be too constrained to accommodate these recommendations, we would consider alternative solutions for close follow up, such as an earlier telehealth or phone consultation and/or outpatient labs, to screen these high-risk patients for early signs of dehydration prior to clinical decline and need for readmission. Of note, since this study period, we have instituted at MSKCC an outpatient electronic symptom monitoring system in the post-operative period; this includes alerts to nursing for patients with self-reported signs and symptoms of dehydration to also help identify high-risk patients for earlier follow up [11].

We acknowledge that one might argue that new ileostomy patients at risk for post-operative dehydration should simply remain inpatient longer in the initial post-operative period to avoid readmission. However, our recent data suggest an at-risk period of at least 16 days post-discharge (75th percentile), or in the case of temporary stomal diversion, to the time of planned ileostomy reversal, which in our practice is typically 2 months to 3 months after a high-risk rectal anastomosis. To have patients remain hospitalized for this duration would be both unfeasible and introduce additional risk, including exposure to nosocomial, antibiotic-resistant infections and cost [12]. In our previously published experience, we also found that patients with longer hospital stays after colorectal surgery had higher subsequent rates of readmission [7]. Most importantly, the nature of successful, long-term ileostomy care prioritizes quality of life and patient independence. This is best achieved with attentive multidisciplinary support and longitudinal follow up for patients in the outpatient setting.

The main limitation of this study is the retrospective analysis of the data from a single institution. We sought to address some of these limitations by carefully collecting and auditing a large patient cohort over a 10-year period, to provide an accurate representation of our clinical practice and provide practice-changing recommendations to address this relevant post-operative complication.

Conclusion

We have demonstrated our collaborative experience in decreasing the common and potentially morbid post-operative complication of dehydration after new ileostomy creation. In our mission to continue to optimize patient outcomes, our data suggest there may be areas to continue to improve, primarily by targeting those new ileostomy patients with high-risk characteristics for earlier follow up, to further decrease the morbidity of ileostomy-associated dehydration.

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Disclosures

There are no relevant conflicts of interest. Dr. Smith served as a clinical advisor for Foundation Medicine (April 2022), consultant and speaker for Johnson and Johnson (May 2022), and clinical advisor and consultant for GlaxoSmithKline (2023-24). Dr. Garcia-Aguilar owns stock in Intuitive Surgical. Dr. Weiser serves as a section editor for UpToDate.

The study was approved by the Institutional Review Board (MSKCC IRB # 16-1265).

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