Cost of stoma-related hospital readmissions for rectal cancer patients following restorative proctectomy with a diverting loop ileostomy: a nation-wide readmissions database analysis

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Introduction

- Diverting loop ileostomies (DLIs) are created at the time of restorative proctectomy (RP) to avoid the clinical consequences of an anastomotic leak
- Patients with DLIs experience more complications than non-diverted patients and experience higher readmission rates[1]

Objective: Assess 6-month stoma-related readmission rate and associated costs for rectal cancer patients undergoing LAR and DLI

Methods

Design

- Cohort study of adult rectal cancer patients who underwent elective RP + DLI (ICD9/10 codes) from 2010-2018 identified from the National Readmission Database [NRD; a Healthcare Cost and Utilization Project (HCUP) database]
- **Excluded** patients operated on July 1-Dec 31 of each year, allowing up to 6-month follow-up for all cases (or up until DLI closure, whichever came first); NRD only provides follow-up withing same calendar year

Analysis

- Univariate and multivariate logistic regression were used to identify risk factors for 6-month readmission for stoma-related complications: **dehydration, AKI, stomal prolapse, stomal stenosis, parastomal hernia with or without gangrene, other mechanical stoma complication**
- Maximum likelihood linear regression -> predictors of readmission cost

Results

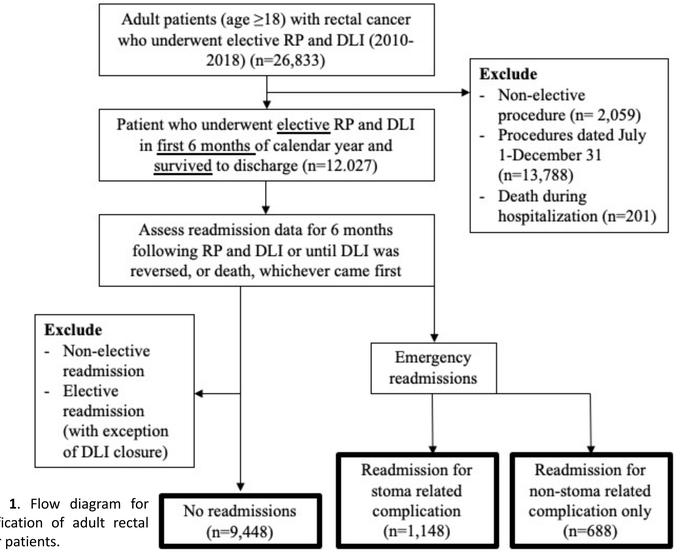


Figure 1. Flow diagram for identification of adult rectal cancer patients.

Table 1. Patient demographics

	No readmission (N=9,448)	Non-stoma related complication readm. (N=822)	Stoma-related complication readm. (N=1,148)	p-value
Age, mean years ± SD	59.1 ± 12.0	57.8 ± 11.9	62.5 ± 11.2	<0.0001
Male, n (%)	5,956 (63.0%)	502 (61.1%)	687 (59.8%)	0.1224
Number of comorbidities	2 (1-3)	2 (1-3)	2 (1-4)	<0.0001
LOS index adm., days	6 (4-8)	6 (4-9)	6 (4-9)	0.0002
Time from index to readm., days	-	36 (16-85)	34 (17-81)	0.2587
LOS readm., days	-	3 (2-6)	4 (3-7)	<0.0001
Total charge, USD	74,246.5 (50,301 - 116,748)	115,196 (77,262-170,399)	118,602 (77,927-181,788)	<0.0001

*Values are expressed as median (IQR) unless otherwise specified; **LOS = Length of stay, adm = admission, readm = readmission

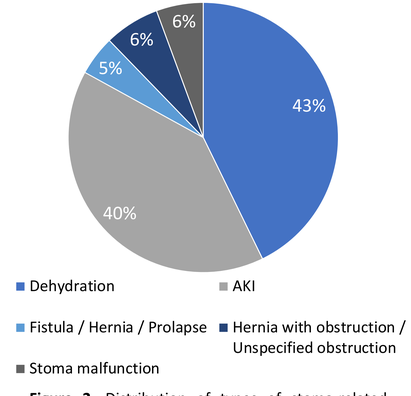


Figure 2. Distribution of types of stoma-related complications leading to readmission

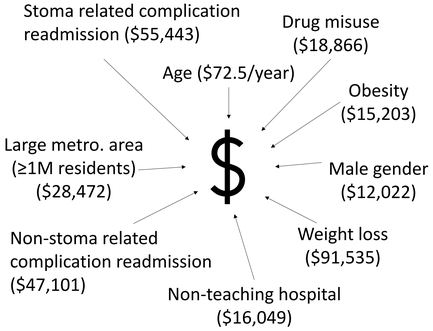


Figure 3. Factors predicting total cost of care (index admission + readmission). Number in brackets is estimated change in total cost of care given presence of factor.

Discussion

- Readmissions post-RP and DLI are common
- Readmissions for stoma-related complications represent an important addition of total cost of care for RP in rectal cancer (average increase of $55,443)
- Patients with DLIs would benefit from additional support and selective early stoma closure

Disclosures

No funding was received for this project. M Boutros received teaching honorarium (Johnson and Johnson).

References

1. Maroney S et al (2016). The American Surgeon;82(10):1033–7;