Pain and Opioid Use After Colorectal Resection for Benign and Malignant Disease

Background

- Opioid dependence and overdose are public health issues
- Results in morbidity, mortality, and increased healthcare utilization
- Short-term opioid use for post-operative pain is a risk factor for long-term opioid use/dependence

Opioid needs and risk for dependence may differ between benign and malignant colorectal diseases

Methods

- Single institution retrospective cohort study
- Elective open, laparoscopic, and robotic colorectal operations
- Compared:
  - Numeric pain scores (NPS) on post-operative day (POD) 0-3
  - Opioids prescribed at discharge
- Descriptive statistics and multiple regression analyses were performed

Results

- Benign indications: 641 patients
- Malignant indications: 276 patients
- Multiple regression analysis: no significant difference in NPS (*B* = 0.703, p=0.095) or opioids prescribed at discharge between groups [OR = 0.803 (95%CI 0.586, 1.1), p=0.173]

Pain scores (NPS) after surgery

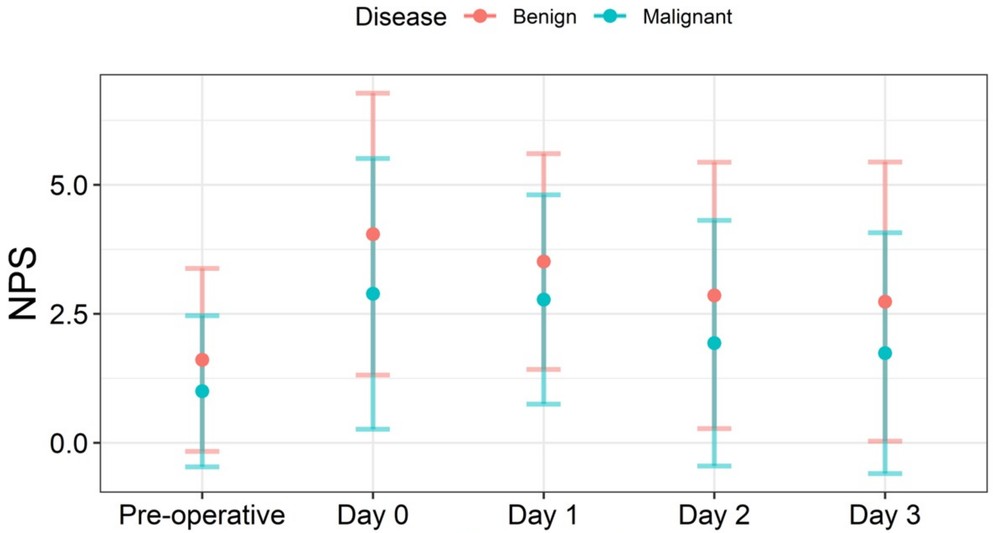


Figure 1: Mean numeric pain scores plotted by disease and time point relative to operation

Variable	Label	Benign (N=641)	Malignant (N=276)	*p*-value
Age	<45	94 (14.66%)	19 (6.88%)	<0.001
	45-65	318 (49.61%)	100 (36.23%)	
	>65	229 (35.73%)	157 (56.88%)	
Sex	Female	374 (58.35%)	137 (49.64%)	0.018
	Male	267 (41.65%)	139 (50.36%)	
Race	Non-White	34 (5.3%)	34 (12.32%)	0.001
	White	606 (94.54%)	242 (87.68%)	
Ethnicity	Hispanic	7 (1.09%)	6 (2.18%)	0.414
	Non-Hispanic	625 (97.66%)	266 (96.73%)	
BMI		28.33 (6.42)	28.8 (6.37)	0.31
No Comorbidities		178 (27.77%)	51 (18.48%)	0.004
Hypertension		265 (41.34%)	145 (52.54%)	0.002
Diabetes		66 (10.3%)	56 (20.29%)	<0.001
Arrhythmias		42 (6.55%)	24 (8.7%)	0.311
COPD/Asthma		77 (12.01%)	32 (11.59%)	0.946
Sleep Apnea		83 (12.95%)	25 (9.06%)	0.118
Renal Disease		39 (6.08%)	20 (7.25%)	0.609
Tobacco Use Current		90 (14.04%)	24 (8.7%)	0.032
ASA Class	2	355 (55.47%)	112 (40.58%)	<0.001
	3	268 (41.88%)	148 (53.62%)	
	4	10 (1.56%)	12 (4.35%)	
Preoperative Non-opioid		551 (85.96%)	250 (90.58%)	0.068
Surgical Approach	Laparoscopic	65 (10.14%)	23 (8.33%)	0.011
	Open	174 (27.15%)	52 (18.84%)	
	Robot	402 (62.71%)	201 (72.83%)	
Surgical Priority	Elective	475 (74.1%)	225 (81.52%)	0.004
	Emergent	71 (11.08%)	12 (4.35%)	
	Urgent	95 (14.82%)	39 (14.13%)	

Table 1: Descriptive statistics of patient demographic, comorbidity, and clinical variables

Indication for surgery is not associated with post-operative pain scores or opioids prescribed at discharge

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