Enhanced Recovery After Surgery (ERAS) Protocol in Colorectal Surgery is Safe and Effective in the Octogenarian: A Retrospective Cohort Study

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Background

- Enhanced recovery after surgery (ERAS) protocols have become widespread in colorectal surgery
- Prior to ERAS length of stay (LOS) averaged 7 days for colectomy
- ERAS shown to reduce complications and LOS
- Average compliance approximately 63%
- Their implementation within the geriatric population has limited data which conflict on safety assessments of ERAS protocols

Methods

- This is a retrospective cohort study
- Inclusion Criteria:
  - Patients age > 18
  - Undergoing Colorectal surgery
  - ERAS protocol utilized
  - December 2019 – October 2021
- Exclusion Criteria:
  - Age < 18
  - Emergency Surgery
  - Incomplete data
- Statistical analysis:
  - P < 0.05 considered significant
  - EZR and R software used for analysis

Results

- 299 patients included with 60 (20.1%) over the age of 80 and 46.8% male. Groups similar for gender and ASA with the < 80 group having a lower BMI (24 v 27, p<0.001).
- No differences in compliance to the protocol in the octogenarian.
- No differences in complications (p=1), time until bowel function (p=0.401), or time to first ambulation (p=0.883).
- Octogenarians had longer LOS (4.89 v 3.0 days; p=0.006), disposition requiring either home health care or a skilled nursing facility (SNF) (52.5% v 28.3%; p=0.008), and readmission (42.3% v 20.8%; p=0.042).

Table 1: ERAS Protocol Compliance

		Age > / = 80		
Factor	Group	No	Yes	p-value
n		239	60	
Carbohydrate Drink Given	No	52 (31.9)	15 (37.5)	0.574
	Yes	111 (68.1)	25 (62.5)	
ERAS Meds Given Pre-op	No	49 (30.8)	12 (30.0)	1
	Yes	110 (69.2)	28 (70.0)	
PO in PACU	No	53 (51.0)	13 (48.1)	0.832
	Yes	51 (49.0)	14 (51.9)	
PACU Sit and Dangle	No	88 (75.9)	23 (82.1)	0.619
	Yes	28 (24.1)	5 (17.9)	
Pain Goal Met	No	9 (16.7)	2 (12.5)	1
	Yes	45 (83.3)	14 (87.5)	
Narcotics Used	No	104 (60.8)	27 (69.2)	0.365
	Yes	67 (39.2)	12 (30.8)	
Opioids Used	No	107 (67.3)	26 (72.2)	0.693
	Yes	52 (32.7)	10 (27.8)	
Time Until BM (hrs)		1.34 [0.11, 43918.27]	1.68 [0.21, 43909.59]	0.401
Time Until Ambulation (hrs)		24.00 [0.00, 96.00]	24.00 [0.00, 48.00]	0.883

Table 2: Post-operative Outcomes

		Age > / = 80		
Factor	Group	No	Yes	p-value
n		239	60	
Any Complication	No	211 (88.3)	53 (88.3)	1
	Yes	28 (11.7)	7 (11.7)	
Infectious Complications	No	231 (96.7)	58 (96.7)	1
	Yes	8 (3.3)	2 (3.3)	
Urinary Retention	No	226 (97.0)	58 (100.0)	0.352
	Yes	7 (3.0)	0 (0.0)	
Post-operative Nausea or Emesis	No	88 (61.1)	25 (73.5)	0.235
	Yes	56 (38.9)	9 (26.5)	
LOS (d)		3.00 [1.00, 20.29]	4.89 [1.25, 19.00]	0.006
Readmission	No	95 (79.2)	15 (57.7)	0.042
	Yes	25 (20.8)	11 (42.3)	
Discharge Disposition	Home	109 (71.7)	19 (47.5)	0.008
	Home with Home Health	35 (23.0)	17 (42.5)	
	Home with PT	0 (0.0)	1 (2.5)	
	Skilled Nursing Facility	8 (5.3)	3 (7.5)	

Conclusion

- ERAS is safe and effective in the Octogenarian
- No increase in complications when compared to younger patients
- No issues with compliance to the protocol among this patient group compared to average age controls
- ERAS still leads to a shorter LOS in octogenarians than general population without ERAS (5 v 7 days).
- Increased LOS, needs upon discharge, and readmission compared to younger patients are consistent with the published literature and unlikely related to use of ERAS protocols.

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