IMPACT OF INDICATIONS AND ENDOSCOPIC FINDINGS ON CONSCIOUS SEDATION REQUIREMENTS IN ENDOSCOPY AND COLONOSCOPY

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Overview: Colonoscopy and upper endoscopy are procedures performed frequently for the diagnosis of disorders of the gastrointestinal tract. Both moderate sedation and monitored anesthesia care are methods used for sedation; however, medication dosages and sedation practices vary widely between institutions. Patients who require higher doses of sedation may have procedures aborted, resulting in additional health care costs to reschedule another procedure under deep sedation/anesthesia support. The aim of this study was to evaluate the impact between specific indication for endoscopy and the requirement for high dosages of Versed and Fentanyl in order to identify patients who may require deep sedation, improving patient experience and reducing health care costs by preventing repeat procedures.

Design: This study was a single-center, retrospective chart review of patients undergoing upper endoscopy or colonoscopy. A total of 9,490 procedures for patients who underwent either upper endoscopy (2,215 procedures) or colonoscopy (7,275 procedures) were reviewed after meeting exclusion criteria. Patients were analyzed based on procedure performed, indication for procedure, dosages of sedative medications administered and procedure length. Participants were adults greater than 18 years of age at a single military center who underwent either upper endoscopy or colonoscopy between 01Jan2015 and 31Jul2020.

Demographics:

EGD	n	Age (years)	Gender M/F (%Female)
Abdominal Pain	160	49.12 ± 15.59	66.25
GI Bleeding	268	67.28 ± 17.11	41.04
Screening	113	63.57 ± 11.85	48.67
Total	541	61.13 ± 17.55	50.01

Colonoscopy	n	Age (years)	Gender M/F (%Female)
Abdominal Pain	74	45.72 ± 16.30	56.76
GI Bleeding	666	48.85 ± 17.83	37.39
Screening	116	48.99 ± 1.34	41.38
Total	856	48.60 ± 16.47	39.00

EGD	n	Versed (mg)	P-value
Abdominal Pain	160	5.03 ± 1.83	<0.01
GI Bleeding	268	4.21 ± 1.78	0.81
Screening	113	5.16 ± 1.83	<0.01
Total	541	4.65 + 1.86	<0.001

EGD	n	Fentanyl (mcg)	P-value
Abdominal Pain	160	97.66 ± 38.53	0.76
GI Bleeding	268	66.79 ± 38.39	
Screening	113	96.02 ± 35.13	
Total	541	82.02 ± 40.62	

Above: Tables demonstrating EGD indications and average doses of Versed and Fentanyl per indication

Below: Tables demonstrating colonoscopy indications and average doses of Versed and Fentanyl per indication

Colonoscopy	n	Versed (mg)	P-value
Abdominal Pain	74	5.27 ± 1.95	0.10
GI Bleeding	666	5.03 ± 1.87	
Screening	116	4.72 ± 1.53	
Total	856	5.01 + 1.84	

Colonoscopy	n	Fentanyl (mcg)	P-value
Abdominal Pain	74	106.42 ± 34.39	0.10
GI Bleeding	666	98.72 ± 34.53	
Screening	116	97.41 ± 29.00	
Total	856	99.21 ± 33.86	

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	EGD Indication	Average Value per Indication	P-value
Average Procedure Time (min.)	Abdominal Pain	13.48 ± 6.61	2.85 X10^-14
	GI bleed	23.15 ± 14.89	
	Screening	19.52 ± 9.32	
CAM (number of patients)	Abdominal Pain	51	0.38
	GI bleed	77	
	Screening	27	
Average BMI	Abdominal Pain	28.62 ± 5.21	0.24
	GI bleed	28.78 ± 5.77	
	Screening	29.82 ± 7.64	

Table demonstrating analysis of procedural and patient factors compared per EGD indication

Results: Our analysis demonstrated significant differences in Versed and Fentanyl doses based on the indication for the procedure for both upper endoscopy and colonoscopy ($p < 0.001$). The rates of high conscious sedation requirement (defined as requiring greater than or equal to 6 milligrams of Versed and/or 150 micrograms of Fentanyl) also differed significantly ($p = 0.003$ for upper endoscopy, $p < 0.001$ for colonoscopy). Post-hoc analysis demonstrated significant difference in procedure time but no significant difference in sedation requirement for those undergoing endoscopy for patient factors to include BMI or prior use of centrally acting medications.

Conclusions: Procedural doses of both Versed and Fentanyl, as well as rates of high conscious sedation requirement, differ significantly based on indication for upper endoscopy and colonoscopy. Patient factors to include BMI and prior use of centrally acting medications do not appear to play as significant of a role as previously thought with regards to overall sedation requirement during these procedures.

References:

Available per request