Epidemiology and age-related trends in surgical outcomes for sigmoid volvulus: a 17-year analysis

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Background

- Prevalence of sigmoid volvulus is likely to increase in parallel to an aging population
- Elderly patients have been recognized as a vulnerable group in many surgical diseases
- Knowledge about surgical outcomes and how to reduce morbidity and mortality in elderly patients needs to be improved.

Aim

- To examine the short-term morbidity and mortality of colectomy for sigmoid volvulus in the elderly compared with the younger patient population using the American College of Surgeons National Surgical Quality Improvement Project (ACS-NSQIP)
- To evaluate trends over a 17-year study period

Methods

- ACS-NSQIP database was queried for colonic volvulus by ICD-codes over the years from 2005-2021
- Proctectomy, proctocolectomy, right, and total abdominal colectomies were excluded
- Patients were assigned to 3 age groups: <60y; 61-75y; >75y
- Multivariable regression was adjusted for confounders: sex, ASA, BMI, smoking, art. hypertension, steroid use, bleeding disorder, approach, emergent surgery

Conclusion

- Patients > 75 years of age have an increased risk of mortality.
- The odds increase continuously with every year.
- Elective laparoscopic surgery in young patients had the lowest odds of 30-day mortality and morbidity.

Results

Table. Demographics and perioperative characteristics of the matched sample

	<60 years	61-75 years	>75 years	p-value
	N=2,067 (30.5%)	N=2,239 (33.1%)	N=2,469 (36.4%)	
Age at Surgery (years)	45.72 (11.1)	67.99 (4.6)	83.07 (4.5)	
Female	468 (22.6%)	363 (16.2%)	381 (15.4%)	<0.001
Body Mass Index (kg/m²)	25.24 (6.2)	25.92 (6)	24.81 (4.7)	<0.001
ASA class 3	761 (36.8%)	1183 (52.8%)	1453 (58.8%)	<0.001
Laparoscopic approach	512 (24.8%)	443 (19.8%)	412 (16.7%)	<0.001
Surgery without diversion	1,670 (83.2%)	1,664 (75.7%)	1,674 (68.7%)	<0.001

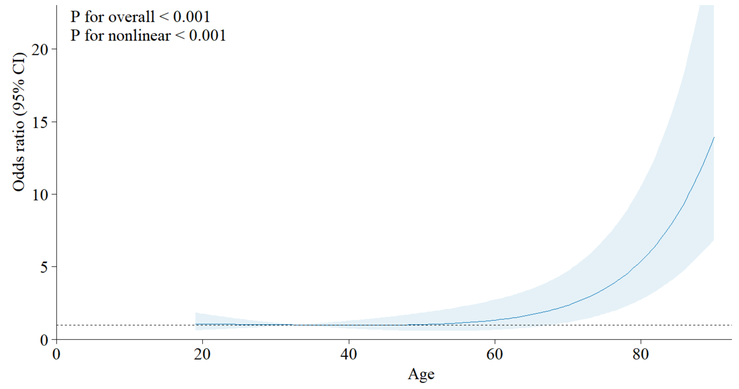
statistics presented as Mean ± SD or N (column %), p-values: Chi-square- and Wilcoxon signed-rank-test

Table. Postoperative odds for mortality and selected morbidity

	OR (95% CI) (61–75 years	P-value	OR (95% CI) Age category 3 (>75)	P-value
30-day mortality	OR 2.2 (1.4, 3.7)	0.001	OR 5.7 (3.6, 9.2)	<0.001
30-day overall morbidity	OR 1 (0.9, 1.2)	0.9	OR 1.1 (0.95, 1.3)	0.2
Myocardial infarction	2.6 (1.1, 7)	0.045	3.3 (1.4, 9)	0.01
Urinary tract infection	OR 1.2 (0.8, 1.8)	0.34	OR 1.8 (1.2, 2.6)	0.006

statistics presented as Odds Ratio (95% confidence interval) p-values: multivariable logistic/linear regression

Figure. Association between 30-day mortality and age



Conflicts of interest:
HS is a consulted for Takeda Pharmaceuticals© and received funding from the Crohn's and Colitis Foundation and the American Society of Colon and Rectum Surgeons.
LS received a research grant from the Austrian Surgical Society and is also affiliated with the University Hospital of Salzburg, Austria.