

Introduction

- Achalasia can lead to severe malnutrition before surgery
- Malnutrition has been linked with adverse surgical outcomes
- Relative use of nutritional status to predict outcomes in per oral endoscopic myotomy (POEM) is unclear.

Objective: Evaluate whether nutritional status is linked to patient outcomes and recovery following POEM.

Study Design and Methods

- Single institution retrospective cohort study
- Data from 2012-2022
- Adults >18 years old who underwent POEM were included
- 247 patients included
- Albumin within 60 days before surgery and post-surgery within 90 days were collected
- Patients were grouped using BMI categories (based on WHO definitions) as well as well pre-op albumin (<3.5 and ≥3.5 g/dL)
- Primary endpoint:** Failure of resolution of symptoms (postop Eckardt score >3)
- Secondary outcome:** 30-day readmission rate.

Univariate Analysis		Eckardt Score		P-Value	Readmission		P-Value
		≤3 (N-212)	>3 (N-35)		No (N-163)	Yes (N-17)	
Male Gender (n)		103 (48.6%)	12 (34.3%)	0.20	79 (48.5%)	10 (58.8%)	0.69
Age at Surgery (years)		60.1 (45.6-69.8)	59.0 (41.4-66.5)	0.23	60.8 (46.0-70.2)	62.9 (57.5-67.8)	0.42
Charlston Comorbidity Index	0	58 (27.4%)	12 (34.3%)	0.49	43 (26.4%)	1 (6.3%)	0.18
	1-2	59 (27.8%)	11 (31.4%)		39 (23.9%)	4 (25.0%)	
	3+	95 (44.8%)	12 (34.3%)		81 (49.7%)	11 (68.8%)	
Overall BMI (kg/m2)		27.65 (23.5-33.75)	29.7 (23.9-32.7)	0.70	27.45 (22.8-33.7)	27.7 (22.4-34.2)	0.68
Preop BMI (kg/m2)	Underweight to normal	70 (33.0%)	10 (28.6%)	0.77	65 (39.9%)	6 (35.3%)	0.8
	Overweight	55 (25.9%)	11 (21.4%)		39 (23.9%)	3 (17.6%)	
	Obese	87 (41.0%)	14 (40.0%)		58 (35.6%)	8 (47.1%)	
Preop Albumin (g/dL)		3.8 (3.4-4.2)	4.1 (3.7-4.3)	0.35	3.9 (3.4-4.3)	3.9 (3.6-4.0)	0.54
Duration of Symptoms (years)	<1 Years	63 (31.5%)	10 (30.3%)	0.60	50 (30.7%)	3 (17.6%)	0.41
	1-3 Years	68 (34.0%)	14 (42.4%)		60 (36.8%)	6 (35.3%)	
	4+ Years	69 (34.5%)	9 (27.3%)		46 (28.2%)	6 (35.3%)	
Multivariate Analysis		Eckardt Score		P-Value	Readmission		P-Value
		OR (95% CI)			OR (95% CI)		
Preop BMI (kg/m2)	Overweight	0.32 (0.06-1.85)		0.20	0.65 (0.15-2.9)		0.57
	Obese	0.62 (0.17-2.27)		0.47	0.78 (0.20-3.01)		0.72
Preop Albumin (>3.5 g/dL)		2.60 (0.59-11.40)		0.21	2.41 (0.50-11.59)		0.27

Table 1. Univariate and Multivariate analysis of patient characteristics, nutritional status (BMI, albumin), and outcomes after POEM

Figure 1. Preop BMI of patients

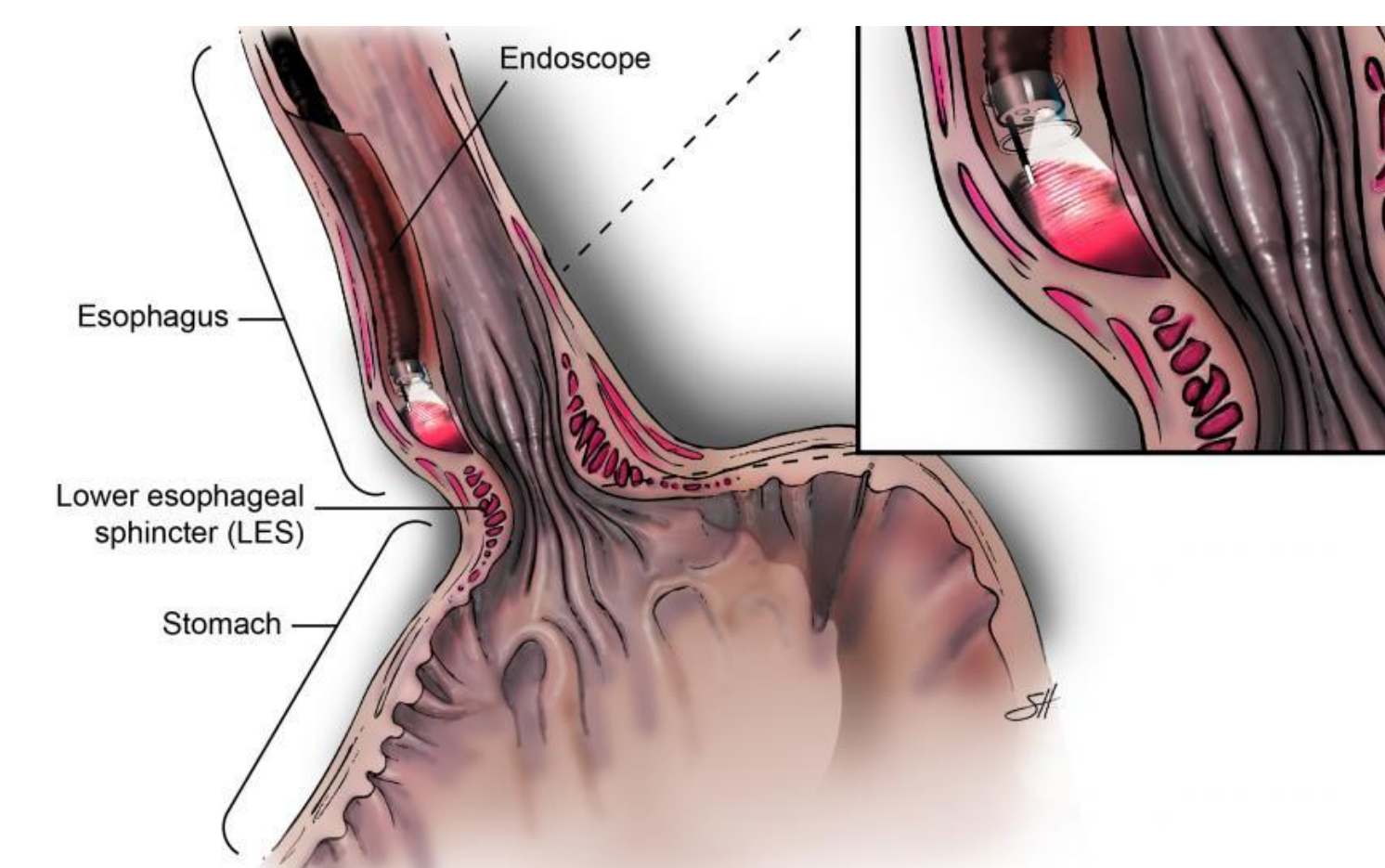
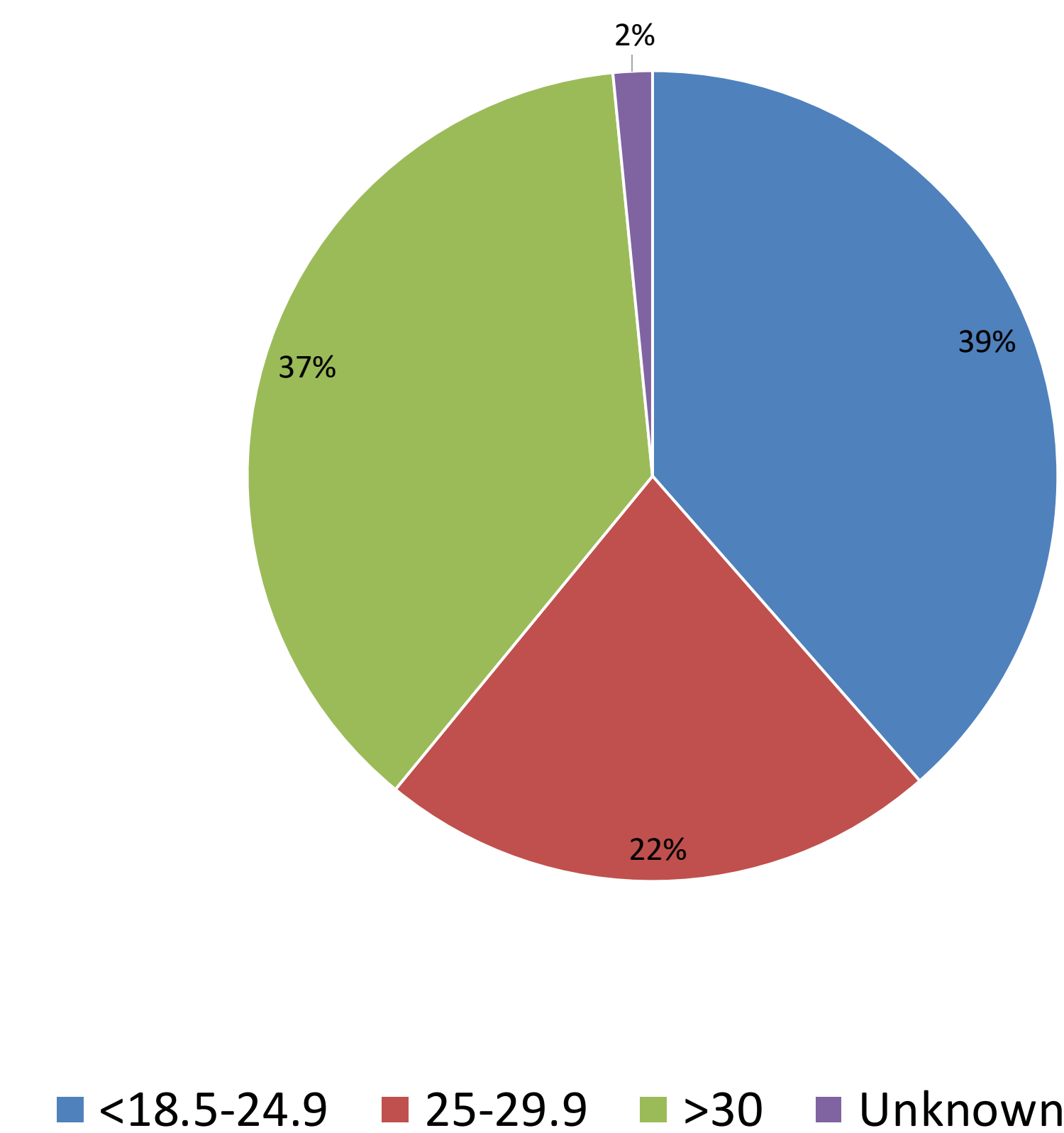


Figure 2. Per oral endoscopic myotomy

Future Direction: Incorporate broader nutritional and physiological measures such as frailty scores to study how they impact the outcomes following POEM

Results

- Median pre-op albumin 3.9 (IQR 4.3-3.4) vs median postop albumin 4.1 (IQR 4.3-3.7)
- 50 (26%) had hypoalbuminemia (<3.5 g/dL), and 9 of these patients normalized postoperatively (albumin > 3.5 g/dL)
- 35 (14.2%) patients had failure of symptom resolution
- No difference in BMI (27.7 vs 29.7, p=0.70) or pre-op albumin (3.8 vs 4.1, p=0.35) between patients with postop symptom resolution or not
- Overall 30-day readmission rate was 6.9%
- No difference in BMI (27.5 vs 27.7, p=0.68) or pre-op albumin (3.9 vs 3.9, p=0.54) among those readmitted vs not
- Neither pre-op albumin nor BMI was associated with treatment failure or 30-day readmission

Conclusions

- POEM can be performed safely and effectively regardless of a patient's nutritional status
- Additional procedures to supplement the patient’s nutritional status should be used selectively