

Achalasia Patients Admitted After Per-Oral Endoscopic Myotomy (POEM): A Snapshot of the United States Population

Dushyant Singh Dahiya¹, Abhilash Perisetti², Hemant Goyal³, Sumant Inamdar⁴, Amandeep Singh⁵, Rajat Garg⁵, Madhu Vennikandam⁶, Sailaja Pisipati⁷, Chin-I Cheng¹, Mohammad Al-Haddad⁸, Madhusudhan Sanaka⁵ & Neil R Sharma^{2,8}

1. Central Michigan University College of Medicine, Saginaw, MI
2. Parkview Cancer Institute, Fort Wayne, IN

3. The Wright Center for Graduate Medical Education, Scranton, PA
4. University of Arkansas for Medical Sciences, Little Rock, AR

5. Cleveland Clinic Foundation, Cleveland, OH
6. Sparrow Hospital/Michigan State University, Lansing, MI

7. Mayo Clinic, Scottsdale, AZ
8. Indiana University School of Medicine, Indianapolis, IN

INTRODUCTION

Achalasia is a neurodegenerative motility disorder of the esophagus characterized by ineffective lower esophageal sphincter (LES) relaxation and peristalsis leading to progressive dysphagia. Per-Oral Endoscopic Myotomy (POEM) is a rapidly emerging minimally invasive procedure for management of achalasia. In this study, we aimed to investigate hospitalization characteristics and outcomes for achalasia patients that who were hospitalized after POEM in the United States (US).

METHODS

The National Inpatient Sample was utilized for 2016–2019 to identify all adult (≥18 years) achalasia patients in the US who were admitted after POEM. Patients' demographic characteristics, outcomes, and complications were highlighted. P-values ≤0.05 were considered statistically significant.

RESULTS

- In the US, 1,885 achalasia patients were admitted to the hospital after POEM between 2016–2019.
- Total number of admissions after POEM increased from 380 in 2016 to 490 in 2019.
- The mean age for these admissions increased from 54.2 years in 2016 to 59.3 years in 2019.
- Most hospitalizations were for the 65–79 age group (31.8%), females (50.4%), and Whites (68.4%), mainly at large (86.2%) urban teaching (96.3%) hospitals.
- The Northeast (33.7%) and South (32.4%) hospital regions had the highest number of POEM-related hospitalizations.

EPIDEMIOLOGICAL VARIABLE	YEARS				
	2016	2017	2018	2019	2016-2019 (Overall)
TOTAL NUMBER OF POEM	380	570	445	490	1,885
MEAN AGE (years) ± STANDARD ERROR	54.2 ± 1.4	56.8 ± 1.5	59.6 ± 1.9	59.3 ± 2.0	57.6 ± 0.9
AGE GROUP DISTRIBUTION(years)					
18 – 34	80 (21.1%)	105 (18.4%)	40 (9.0%)	60 (12.2%)	285 (15.1%)
35 – 49	75 (19.7%)	80 (14.0%)	75 (16.9%)	75 (15.3%)	305 (16.2%)
50 – 64	115 (30.3%)	155 (27.2%)	155 (34.8%)	115 (23.5%)	540 (28.7%)
65 – 79	90 (23.7%)	195 (34.2%)	115 (25.8%)	200 (40.8%)	600 (31.8%)
≥ 80	20 (5.3%)	35 (6.1%)	60 (13.5%)	40 (8.2%)	155 (8.2%)
GENDER					
Male	185 (48.7%)	270 (47.4%)	220 (49.4%)	260 (53.1%)	935 (49.6%)
Female	195 (51.3%)	300 (52.6%)	225 (50.6%)	230 (46.9%)	950 (50.4%)
RACE					
White	275 (76.4%)	380 (69.7%)	270 (62.1%)	320 (66.7%)	1,245 (68.4%)
Black	45 (12.5%)	90 (16.5%)	75 (17.2%)	60 (12.5%)	270 (14.8%)
Hispanic	30 (8.3%)	45 (8.3%)	50 (11.5%)	50 (10.4%)	175 (9.6%)
Asian	< 11 (1.4%)	0 (0.00%)	15 (3.5%)	30 (6.3%)	50 (2.8%)
Others	< 11 (1.4%)	30 (5.5%)	25 (5.8%)	20 (4.2%)	80 (4.4%)
CHARLSON COMORBIDITY INDEX (CCI)					
CCI = 0	230 (60.5%)	350 (61.4%)	220 (49.4%)	260 (53.1%)	1,060 (56.2%)
CCI = 1	55 (14.5%)	130 (22.8%)	120 (27.0%)	150 (30.6%)	455 (24.1%)
CCI = 2	50 (13.2%)	40 (7.0%)	50 (11.2%)	40 (8.2%)	180 (9.6%)
CCI ≥ 3	45 (11.8%)	50 (8.8%)	55 (12.4%)	40 (8.2%)	190 (10.1%)
HOSPITAL REGION					
Northeast	135 (35.5%)	205 (36.0%)	120 (27.0%)	175 (35.7%)	635 (33.7%)
Midwest	125 (32.9%)	135 (23.7%)	85 (19.1%)	60 (12.2%)	405 (21.5%)
South	80 (21.1%)	165 (29.0%)	170 (38.2%)	195 (39.8%)	610 (32.4%)
West	40 (10.5%)	65 (11.4%)	70 (15.7%)	60 (12.2%)	235 (12.5%)
HOSPITAL BED SIZE					
Small	< 11 (1.3%)	0 (0.0%)	15 (3.4%)	25 (5.1%)	45 (2.4%)
Medium	25 (6.6%)	95 (16.7%)	45 (10.1%)	50 (10.2%)	215 (11.4%)
Large	350 (92.1%)	475 (83.3%)	385 (86.5%)	415 (84.7%)	1,625 (86.2%)
HOSPITAL LOCATION & TEACHING STATUS					
Rural	< 11 (1.3%)	< 11 (0.9%)	0 (0.0%)	0 (0.0%)	< 11 (0.5%)
Urban Nonteaching	15 (4.0%)	25 (4.4%)	< 11 (1.1%)	15 (3.1%)	60 (3.2%)
Urban Teaching	360 (94.7%)	540 (94.7%)	440 (98.9%)	475 (96.9%)	1,815 (96.3%)
DISCHARGE HOME	340 (89.5%)	495 (86.8%)	390 (87.6%)	440 (89.8%)	1,665 (88.3%)
INPATIENT MORTALITY	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
LENGTH OF STAY (DAYS)	4.0	3.7	3.9	3.2	3.7
TOTAL HEALTHCARE CHARGE (\$)	52,057	75,240	67,520	65,109	66,151
COMPLICATIONS					
Major Post-Procedural Hemorrhage	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Esophageal Perforation	< 11 (1.3%)	< 11 (0.9%)	< 11 (1.1%)	< 11 (2.0%)	25 (1.3%)
Post-Procedure Sepsis	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Post-Procedure Pneumonia	< 11 (1.3%)	0 (0.0%)	< 11 (1.1%)	< 11 (1.0%)	15 (0.8%)

RESULTS

- Most of the study population was eventually discharged home (88.3%) after the hospitalization.
- No inpatient mortality was noted for POEM-related hospitalizations.
- The mean length of stay (LOS) decreased from 4 days in 2016 to 3.2 days in 2019.
- The mean total healthcare charge (THC) increased from \$52,057 in 2016 to \$65,109 in 2019.
- Esophageal perforation was the most common complication noted for 1.3% of all patients.
- Post-procedure pneumonia was observed in 0.8% of the study cohort.

DISCUSSION

Same-day discharges after POEM are safe and feasible. However, some patients may be hospitalized post-procedure. In this study, we noted an increase in the number of achalasia patients who were hospitalized after POEM between 2016 to 2019, mainly at large urban teaching centers. Furthermore, there was no POEM-related mortality and rates of complications were extremely low, reflecting an excellent safety profile of this advanced procedure. We noted a decrease in the mean LOS for these hospitalizations which may be attributed to improvements in the management strategies as familiarity with the procedure rises.

CONTACT

Dushyant Singh Dahiya, MD
Resident, Department of Internal Medicine
Central Michigan University College of Medicine, Saginaw, MI
Email: dush.dahiya@gmail.com
Phone: (678) 602-1176
Twitter: @DushDahiya