



Current Trends in Endoscopic Therapy for T1a Esophageal Adenocarcinoma in the United States



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BACKGROUND

- Esophageal adenocarcinoma (EAC) is the fastest growing esophageal cancer in the United States¹.
- National guidelines now recommend endoscopic intervention as preferred therapy over surgery as first line treatment for T1aN0M0 EAC^{2,3}.
- However, endoscopic therapy for early EAC requires specialized training and is often only available at tertiary referral centers.

STUDY AIMS

- To investigate possible geo-regional differences in the rates of endoscopic intervention for T1aN0M0 EAC using data from the Surveillance, Epidemiology and End Results (SEER) Database

METHODS

- 1526 Patients diagnosed with primary T1aN0M0 esophageal cancer from 2004-2015 via the November 2018 submission of the SEER database were included.
- Registry data was divided geographically in 4 geographic regions: (West (blue), Northeast (green), Midwest (purple), South (orange))

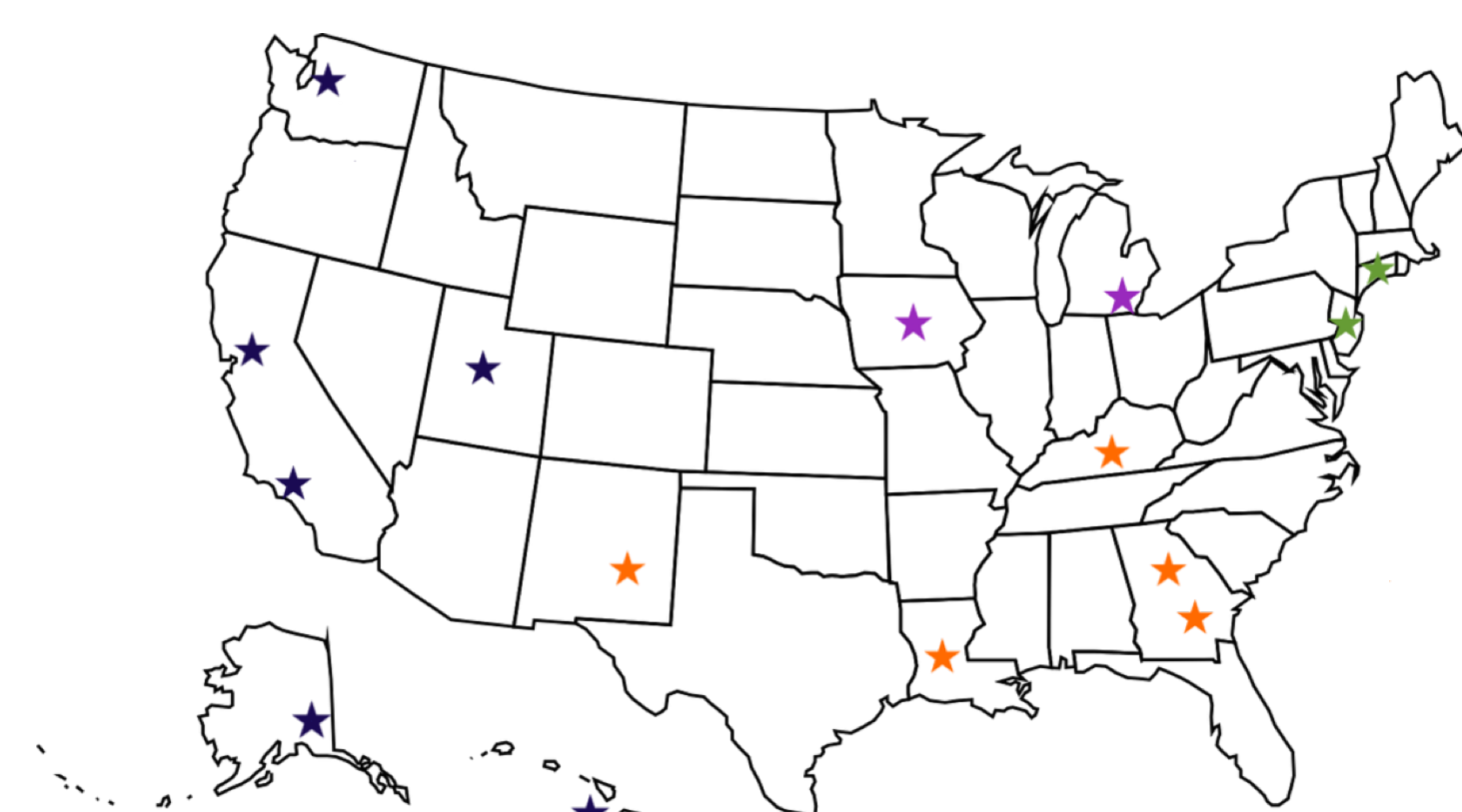
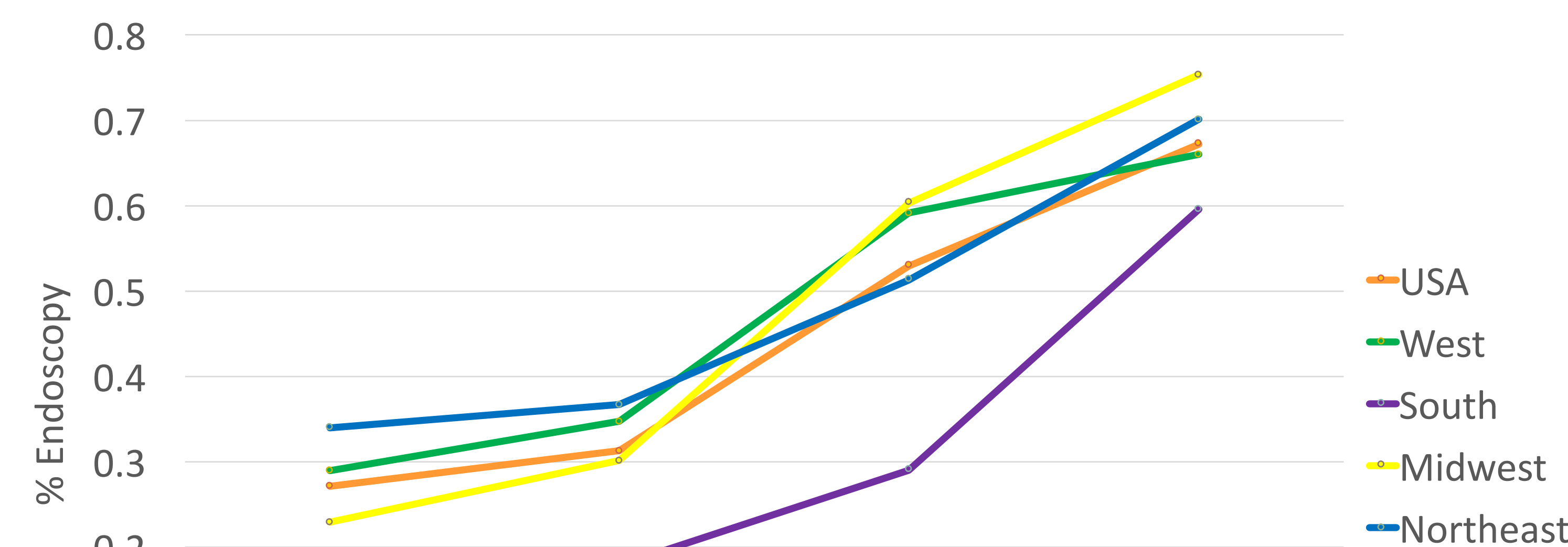


Table 1: Demographic and Tumor Characteristics by Region

	Overall	Midwest	Northeast	South	West	P - value
n	1526	256	295	260	715	
Age at diagnosis (mean (SD))	66.15 (10.19)	65.68 (10.28)	65.87 (10.89)	64.25 (9.35)	67.12 (10.05)	0.001
Sex = Male (%)	1317 (86.3)	217 (84.8)	250 (84.7)	229 (88.1)	621 (86.9)	0.574
Caucasian	1471 (96.4)	251 (98.0)	293 (99.3)	249 (95.8)	678 (94.8)	
Tumor size (mean (SD))	15.20 (13.31)	16.64 (14.34)	13.87 (12.15)	14.88 (13.50)	15.32 (13.28)	0.368
Tumor Grade(%)						0.315
Well differentiated; Grade I	259 (25.9)	36 (22.9)	49 (24.3)	44 (22.9)	130 (28.9)	
Moderately differentiated; Grade II	523 (52.2)	80 (51.0)	110 (54.5)	110 (57.3)	223 (49.6)	
Poorly differentiated; Grade III	204 (20.4)	36 (22.9)	39 (19.3)	37 (19.3)	92 (20.4)	
Undifferentiated; anaplastic; Grade IV	15 (1.5)	5 (3.2)	4 (2.0)	1 (0.5)	5 (1.1)	
Endoscopic intervention (%)	714 (46.8)	126 (49.2)	150 (50.8)	90 (34.6)	348 (48.7)	<0.001

Figure 1: Endoscopy Rates for T1a EAC by Region over Time



	2004-2006	2007-2009	2010-2012	2013-2015	% increase/3 years	p-value
USA	27.2	31.2	53.0	67.2	17.2	<0.01
West	28.9	34.7	59.1	66.0	18.0	
South	16.7	17.9	29.0	59.6	12.6	
Midwest	22.9	30.1	60.3	75.3	18.9	
Northeast	34.0	36.6	51.4	70.1	18.1	

RESULTS

- The majority of patients were white males with an average age of 66.
- Tumor size and histologic grade were not significantly different between regions.
- By 2013, over half of all T1aN0M0 cancers were being managed endoscopically across all US regions.
- The South had the lowest absolute rates and rates of change of esophageal adenocarcinomas managed endoscopically over the study period. The lower rates of endoscopy in the South were inversely correlated with higher rates of poverty in the South (based on median household income and % living at <150% poverty level, data not shown)
- Overall, the rates of endoscopy increased in all regions over time, with highest rates of growth in the Midwest.

CONCLUSIONS

- There are significant regional disparities in the rates of endoscopic intervention for T1aN0M0 esophageal adenocarcinoma, with the lowest rates in the South, despite similar tumor characteristics across regions.
- These differences are likely multifactorial and heavily influenced by socioeconomic factors as previously reported^{4,5}.
- Further investigation on causes of these disparities is needed as T1a EAC is a treatable condition. Access to capable centers is likely an important contributor.

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References

- Siegel RL, Miller KD, Fuchs HE, Jemal A. Cancer statistics, 2022. *CA Cancer J Clin.* 2022;72(1):7-33.
- Merkow RP, Billimoria KY, Keswani RN, et al. Treatment trends, risk of lymph node metastasis, and outcomes for localized esophageal cancer. *J Natl Cancer Inst.* 2014;106(7).
- Network NCC. NCCN Clinical Practice Guidelines in Oncology - Esophageal and Esophagogastric Junction Cancers.
- Thein HH, Anyiwe K, Jembere N, Yu B, De P, Earle CC. Effects of socioeconomic status on esophageal adenocarcinoma stage at diagnosis, receipt of treatment, and survival: A population-based cohort study. *PLoS One.* 2017;12(10):e0186350.
- Lineback CM, Mervak CM, Revels SL, Kemp MT, Reddy RM. Barriers to Accessing Optimal Esophageal Cancer Care for Socioeconomically Disadvantaged Patients. *Ann Thorac Surg.* 2017;103(2):416-421.