

The Prevalence of Dysplasia in Ultrashort Barrett's Esophagus in a United States Veteran Population

Ronan Allencherril, MD¹; Theresa Nguyen Wenker, MD, MPH^{2,3}; Gyanprakash Ketwaroo, MD²; Rollin George, MD²; Aaron P. Thrift, PhD^{4,5}; Hashem El-Serag, MD, MPH^{2,3}

²Section of Gastroenterology and Hepatology, ¹Department of Medicine, Baylor College of Medicine, Houston, Texas, USA

³Center for Innovations in Quality, Effectiveness and Safety (IQUES), Michael E DeBakey Veterans Affairs Medical Center, Houston, Texas, USA

⁴Section of Epidemiology and Population Sciences, Department of Medicine, Baylor College of Medicine, Houston, Texas, USA

⁵Dan L. Duncan Comprehensive Cancer Center, Baylor College of Medicine, Houston, Texas, USA



Background

- Surveillance of Barrett's esophagus (BE) is the only known precursor to esophageal adenocarcinoma (EA)
 - Basis for secondary prevention of EA
- Length of BE has been associated with increased EA risk
- Current guidelines recommend against biopsies of ultrashort BE based on limited evidence

Objective

Our study aims to characterize the prevalence of dysplasia in ultrashort BE

Data & Methods

Study Population:

- 741 male veterans with new BE diagnosis from 1990-2019
- Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX
- Retrospectively collected data

Definitions:

- Ultrashort BE: length <1cm
- Persistent ultrashort BE: ultrashort BE on index EGD and on all follow-up EGDs
- Dysplasia categorized as indefinite, low-grade, and high-grade
- Definite dysplasia includes both low-grade and high-grade

Variables:

- Age
- Race
- Gender
- Body mass index (BMI)
- Smoking history
- Alcohol history

Statistical analysis:

- Used chi-square test to examine association of variables with dysplasia in ultrashort BE and BE

Results

Table 1: Sociodemographic and clinical characteristics of any dysplasia (indefinite for dysplasia, low-grade dysplasia, and high-grade dysplasia) among those with and without ultrashort Barrett's esophagus.

	Ultrashort BE <1cm at Index EGD			BE ≥1cm at Index EGD		
	No Dysplasia N=114 N (%)	Any Dysplasia N=36 N (%)	p-value	No Dysplasia N= 280 N (%)	Any Dysplasia N=311 N (%)	p-value
Age						
<60 years	45 (39.5%)	9 (25.0%)	0.115	94 (33.6%)	104 (33.4%)	0.973
60+ years	69 (60.5%)	27 (75.0%)		186 (66.4%)	207 (66.6%)	
Sex						
Male	106 (93.0%)	34 (94.4%)	0.759	269 (96.1%)	304 (98.1%)	0.147
Female	8 (7.0%)	2 (5.6%)		11 (3.9%)	6 (1.9%)	
Race						
Non-Hispanic White	86 (75.4%)	26 (72.2%)	0.470	216 (77.1%)	264 (85.9%)	0.009
African American	17 (14.9%)	4 (11.1%)		36 (12.9%)	16 (5.1%)	
Hispanic	11 (9.7%)	6 (16.7%)		26 (9.3%)	30 (9.7%)	
Other/Missing	0 (0.0%)	0 (0.0%)		2 (0.7%)	1 (0.3%)	
BMI Categories						
Normal (<25)	18 (15.8%)	11 (30.6%)	0.003	52 (18.6%)	51 (16.4%)	0.878
Overweight (25-29.9)	38 (33.3%)	18 (32.1%)		106 (37.9%)	126 (40.5%)	
Obese (30+)	58 (50.9%)	7 (19.4%)		120 (42.9%)	132 (42.4%)	
Missing	0 (0.0%)	0 (0.0%)		2 (0.7%)	2 (0.6%)	
Smoking						
Never Smoker	29 (25.4%)	8 (22.2%)	0.813	78 (27.9%)	83 (26.7%)	0.429
Former Smoker	59 (51.8%)	18 (50.0%)		121 (43.2%)	150 (48.2%)	
Current Smoker	26 (22.8%)	10 (27.8%)		81 (28.9%)	78 (25.1%)	
Alcohol Use						
Never Alcohol Use	36 (31.6%)	12 (33.3%)	0.862	128 (45.7%)	115 (37.0%)	0.088
Former Alcohol Use	28 (24.6%)	10 (27.8%)		58 (20.7%)	70 (22.5%)	
Current Alcohol Use	50 (43.9%)	14 (38.9%)		94 (33.6%)	126 (40.5%)	

Abbreviations: BE (Barrett's esophagus), cm (centimeter), BMI (body mass index)

- Mean follow time:** 4.6 years (standard deviation (SD) 5.5 years)
- Ultrashort BE** present in 20.2% (n=150) of patients
 - 131 underwent at least two EGDs
- Persistent ultrashort BE**
 - Found in 92 patients (12.4%)
 - Prevalence of any dysplasia: 21.7% (n=20)
 - Prevalence of definite dysplasia: 4.4% (n=4)
 - All cases of dysplasia diagnosed at index EGD
- Prevalence of any dysplasia and definite dysplasia was 24.0% and 4.7% respectively in ultrashort BE
- Prevalence of any dysplasia and definite dysplasia was 52.6% and 23.8% respectively in ultrashort BE
- 2.7% (n=4) of patients with ultrashort BE developed any dysplasia after index EGD
- Normal BMI associated with any dysplasia in patients with ultrashort BE (p-value 0.003)
- Non-Hispanic Whites race was associated with any dysplasia among those without ultrashort BE (p-value 0.009)

Conclusions

- Prevalence of dysplasia is higher with longer segment BE >1cm
- Prevalence of dysplasia in ultrashort BE as high as 24.0%
- Ultrashort BE should not be excluded from surveillance

Implications

- Ultrashort BE is not as benign as originally thought
- Dysplasia is relatively common in ultrashort BE
- Further studies needed to recommend change to current guidelines, which do not recommend surveillance in this population