



# Disparity of Esophageal Biopsy in Racial and Ethnic Minority Patients

## Causing Underdiagnosis of Eosinophilic Esophagitis

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### Background

- Eosinophilic Esophagitis (EoE) is thought to be more prevalent in patients who self-identify as non-Hispanic White.
- The prevalence of EoE may be underreported in racial and ethnic minority populations.
- We investigated the rates of esophageal biopsies in patients presenting with dysphagia, taking race/ethnicity into consideration to understand how clinicians may be differentially evaluating for EoE.

### Methods

- Retrospective, multicenter study comparing the rate of esophageal biopsy among patients who received an endoscopy and had dysphagia from July to December 2020
- Chi square analysis comparing the frequency of endoscopic features seen in EoE and the reason why esophageal biopsies were taken among race and ethnicity
- Multivariable logistic regression model measuring the odds of being biopsied by race/ethnicity, adjusting for number of endoscopies, hospital, gender, age, and endoscopic features of EoE

Table 1: Regression Analysis Comparing Odds of Esophageal Biopsy Stratified by Race

	Odds Ratio for Biopsy <sup>‡</sup> (95 Percent Confidence Interval)
Latinx	0.58 (0.37, 0.90)
Black	0.58 (0.35, 0.98)
Age	0.97 (0.96, 0.98)
Female Sex	0.86 (0.62, 1.19)
Number of EGDs	1.17 (1.04, 1.33)
Endoscopic Features of EoE	1.95 (1.40, 2.71)
Safety-net Hospital	0.39 (0.27, 0.58)

<sup>‡</sup>Odds ratio for race and ethnicity were generated in comparison to non-Hispanic White patients

Table 2: Rate of Biopsy, Endoscopic Features of EoE, EoE as Indication for Biopsy, Patients with EoE Stratified by Race

	Non-Hispanic White	Latinx	Black	p-value*
Number of patients <sup>‡</sup>	541 (67.5%)	133 (16.6%)	77 (9.6%)	n/a
Rate of biopsy	386 (71.4%)	69 (51.9%)	42 (54.5%)	p < 0.001*
Features of EoE <sup>†</sup>	210 (38.8%)	37 (27.8%)	14 (18.1%)	p < 0.001*
EoE as indication for esophageal biopsy <sup>§</sup>	164 (42.5%)	26 (37.7%)	8 (19.0%)	p = 0.014*
Patients with EoE	73 (96.1%)	2 (2.6%)	1 (1.3%)	p < 0.001*

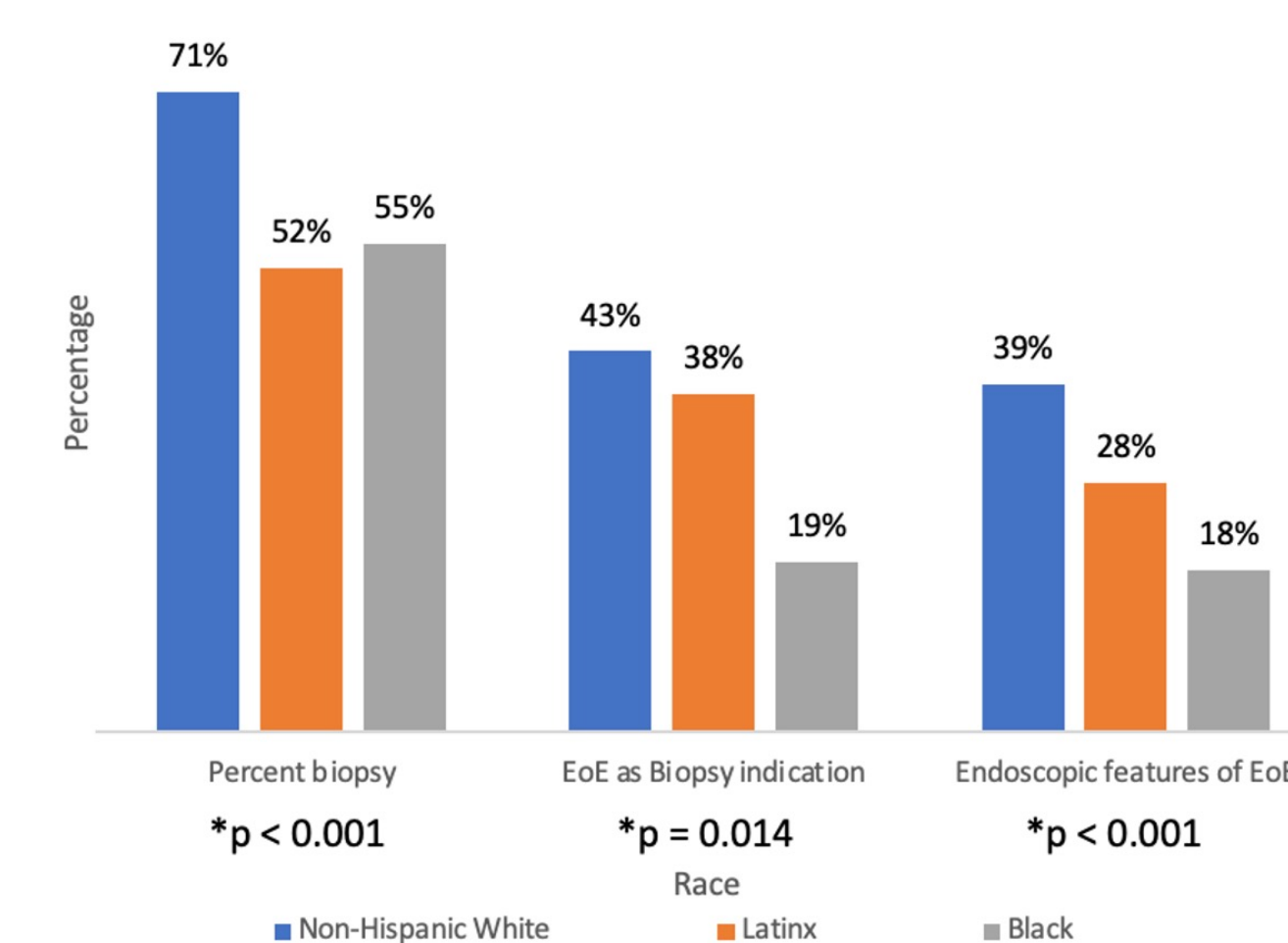
<sup>‡</sup>51 patients identified as Asian, two or more races, Native American or Alaska Native, or identified as other

<sup>†</sup> Features of EoE included longitudinal furrows, concentric rings, mucosal edema, exudates, stricture, and narrow caliber esophagus

<sup>§</sup> Among patients that were biopsied

\*p-values obtained from chi-square analysis

Figure 1: Biopsy Rate, EoE as Biopsy Indication, and Endoscopic Features of EoE Stratified by Race



### Results

- N = 802 charts, 628 from the university-based hospital and 174 from the safety-net hospital
- Rate of Biopsy
  - Non-Hispanic White: 71.3%
  - Black: 54.6%
  - Latinx: 51.9%
  - Endoscopic Features of EoE: 81.9%
  - Normal Endoscopy: 53.9%
  - University Hospital: 71.5%
  - Safety-net Hospital: 47.1%
- Logistic regression analysis showed that both Latinx and Black patients were 42% less likely to be biopsied when compared to non-Hispanic White patients.

### Conclusions

- The rate of esophageal was lower in ethnic and racial minority populations compared to non-Hispanic White patients
- The rate of esophageal biopsy differed significantly between hospitals
- Providers documented that esophageal biopsies were taken to investigate EoE more frequently in non-Hispanic White patients
- EoE was diagnosed more frequently in the university hospital and in non-Hispanic White patients
- The endoscopic features of EoE were observed more frequently in non-Hispanic White patients