

POPULATION-BASED NATIONAL STUDY

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Overview

- Eosinophilic esophagitis (EoE) and inflammatory bowel disease (IBD) are immune-mediated diseases with potential pathogenesis and epidemiology intersections.
- We aim to investigate the relationship between EoE and IBD and describe the epidemiology of individuals with EoE with co-existent IBD in the United States (US).

Methods

- We queried a multi-institutional database (Explorys Inc, Cleveland, OH), an aggregate of electronic health record data from 26 major integrated US healthcare systems.
- We identified an aggregated patient cohort of eligible patients with EoE and concomitant IBD based on Systematized Nomenclature of Medicine - Clinical Terms (SNOMED-CT) from 1999 to present.
- we calculated the prevalence of IBD in EoE and among different patient group.

Results

- Of the 70,383,890 individuals in the database, we identified 41,670 patients with EoE, 249,420 patients with Crohn’s disease (CD), and 208,990 patients with Ulcerative colitis (UC).
- Patients with EoE had concomitant CD, with an overall prevalence of CD in EoE being 2%, with an odds ratio (OR) of 5.80 (95% CI: 5.42-6.21, p < 0.0001), compared to individuals without EoE.

- Patients with EoE also had concomitant UC, with an overall prevalence of UC in EoE being 1.6%, with an odds ratio (OR) of 5.42 (95% CI: 5.02-5.85, p < 0.0001), compared to individuals without EoE (figure 1).
- The prevalence of CD in EoE was higher in males vs. females (58.3% vs. 41.7%), Caucasians vs. non-Caucasians (78.6% vs. 21.4%), and in patients 18-65-year-old vs. >65 years old (88.1% vs. 11.9%), P < 0.0001 to all.
- Similarly, the prevalence of UC in EoE was higher in males vs. females (55% v.s 45%), Caucasians v.s non-Caucasians (80.3% v.s 19.7%), and in patients 18-65 years old vs. >65 years old (80.3% vs. 19.7%), P < 0.0001 to all (table 1). 19.7%), P < 0.0001 to all (table 1).

CD in EoE

Variables	Odds Ratio	95% CI	P Value
Age (18-65 vs ≥65)	54.76	40.76-73.57	< 0.0001
Sex (Male vs Female)	1.96	1.61-2.38	< 0.0001
Race (Caucasian vs non-Caucasian)	13.44	10.65-16.97	< 0.0001

UC in EoE

Variables	Odds Ratio	95% CI	P Value
Age (>/ 65 vs 18-65)	16.62	12.67-21.80	< 0.0001
Sex (Male vs Female)	1.36	1.09-1.69	< 0.0001
Race (Caucasian vs non-Caucasian)	16.62	12.67-21.80	< 0.0001

Table 1: Gender, Race and Age based sub-groups distribution of CD in EoE and UC in EoE. Univariate analysis used to calculate OR. OR; odds ratio. CI; confidence interval, CD; Crohn's disease, UC; ulcerative colitis, EoE; eosinophilic esophagitis.

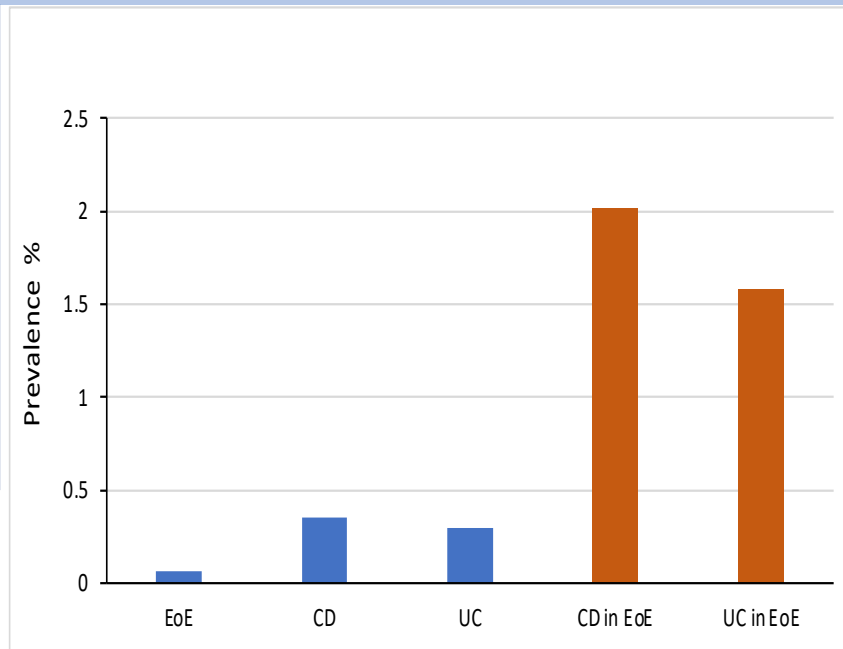


Figure 1: Prevalence of EoE, CD, UC, CD in EoE and UC in EoE overall. EoE; Eosinophilic Esophagitis, CD; crohn's disease, UC; ulcerative colitis.

Discussion

- In one of the first large population-based studies on the epidemiology of IBD and EoE, we found that the prevalence of CD in EoE is 2% and UC in EoE 1.6% which emphasizes the importance of awareness among the gastroenterologists regarding the coexistence of EoE and IBD.
- Further studies are needed to understand the underlying mechanism of the association between these conditions.