

Introduction

- Inflammatory bowel disease (IBD) is comprised of Ulcerative Colitis (UC) and Crohn’s Disease (CD).
- IBD is hypothesized to be caused by a combination of environmental factors, immune dysregulation, and genetic susceptibility.
- Other immune-mediated phenomena, like hypothyroidism, are also observed in this select population.
- Per literature and clinical trials, little is known about the impact of concomitant hypothyroid disease and IBD on clinical outcomes.

Methods

- Retrospective analysis of patients receiving care at a large tertiary academic medical center was performed.
- Patients with a diagnosis of either UC or CD **and** at least one thyroid stimulating hormone (TSH) measurement were included.
- Patients were then divided into two groups based on the presence of a documented hypothyroidism ICD-10 code.
- Primary outcomes studied included disease characteristics, comorbidities, disease biomarkers, medication usage, and healthcare utilization.

Table 1: Baseline Characteristics at Enrollment

	Patients n = 265	IBD only N=93	IBD + Hypothyroidism N=172	p- value
Age (years, mean, SD)	61.5 (18.8)	54.9 (19.7)	64.9 (17.3)	<0.01
Female (n, %)	182	58 (62%)	124 (72%)	0.103
White (n, %)	220 (83)	75 (81)	145 (84)	0.449
Never Smoker (n, %)	152 (57)	61 (66)	91 (53)	0.046
BMI (median, IQR)	25.0 (6.92)	24.8 (5.9)	25.5 (7.5)	0.279
IBD Subtype (n, %)				0.122
CD	142 (54)	56 (60)	86 (50)	
UC	122 (46)	37 (40)	85 (50)	
Disease Duration (years, Median, IQR)				
IBD	7.6 (3.7)	8.1 (3.8)	7.5 (3.6)	0.147
Hypothyroid Disease	7.6 (3.3)		7.6 (3.3)	
Elevated TSH Ever (n, %)	63 (24)	5 (5)	58 (34)	<0.01
Levothyroxine Rx ever (n, %)	110 (44)	3 (3)	107 (67)	<0.01
History of Intestinal Surgery (n, %)	28 (11)	7 (8)	21 (13)	0.105
Extraintestinal Manifestations (n, %)	36 (14)	7 (8)	29 (18)	0.020

Table 2: Multivariate Analysis of Biomarkers and Healthcare Utilization

	Adjusted Odds Ratio	95% CI	p-value
Anemia Ever	1.88	(1.09-3.26)	0.024
Hypoalbuminemia Ever	1.65	(0.83-3.24)	0.150
CRP Elevation Ever	2.10	(1.17-3.76)	0.013
ESR Elevation Ever	2.43	(1.22-4.84)	0.012
>1 Colonoscopy	1.39	(0.81-2.42)	0.232
>1 ED Visit	1.98	(1.12-3.50)	0.019
>1 Hospitalization	1.18	(0.68-2.05)	0.553
>1 X-Ray/CT Scan	3.11	(1.75-5.54)	<0.01

Results

- 265 adult IBD patients (CD 54%, UC 46%) were identified. Among these patients, 172 patients (64.9%) had IBD **and** hypothyroidism.
- IBD disease location, behavior, and medication use did not significantly differ between the two study groups.
- Both groups had similar number of colonoscopies, and hospitalizations.
- However, patients with IBD and hypothyroidism had higher rates of anemia (p<0.01), hypoalbuminemia (p=0.039), CRP elevations (p<0.01), and ESR elevations (p<0.01) on univariate analysis.
- Furthermore, patients with both IBD and hypothyroidism had a greater median number of emergency department visits (p=0.039) and axial radiography (p=0.002).

Conclusion

- Despite having similar phenotypes and therapy exposures, IBD patients with concomitant hypothyroidism experienced more severe disease than that of those without, as evidenced by inflammatory biomarkers and greater healthcare utilization.
- Further investigation regarding this relationship is warranted as this subgroup could be at risk for worse clinical outcomes.