

Trends in Ocular Manifestations Requiring Inpatient Admission in Inflammatory Bowel Disease: A Nationwide Analysis

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BACKGROUND:

- Inflammatory Bowel Disease (IBD) can affect the gut and almost every other body system.
- Extra-intestinal manifestations (EIM) play a significant role in lifetime care and quality of life in IBD patients.
- Ocular Manifestations (OM) are a common form of EIM and often present in insidious ways but can have dire consequences, including permanent vision loss in these patients.
- We explore the trends of OM in IBD patients requiring inpatient admission over the past decade.

METHODS

- We conducted a retrospective review on NIS years 2008-2018
- International classification of disease (ICD) codes identified variables, including NAFLD
- Chi-square test, logistic, and multivariate analysis was performed to analyze comparisons and find odds ratios.

RESULTS

- A total of 3,474,827 IBD patients were included in this study, out of which 24,280 had OM.
- Caucasians had the highest rate of OM at 74%, followed by African Americans at 15% ($p < 0.05$). Majority of the admissions were at large bed-size (70% vs 59% $p < 0.05$) non-teaching hospitals (74% vs 26% $p < 0.05$).
- The rate of OM has remained between 0.8-1% over the past decade ($p < 0.05$). As a disease overall, IBD increases the risk of OM [1.03 (1.02-1.04) $p < 0.05$]
- By subtype, UC does not have a statistically significant impact on OM, while CD does increase the odds of developing OM [1.10 (1.05-1.15) $p < 0.05$].
- The most common OM seen were cataracts, conjunctivitis, uveitis, and episcleritis.

As IBD prevalence has increased over the years, OM continue to be a significant burden on this population. The rate of OM has remained approximately the same over the past decade, indicating that despite new and innovative treatments that may prevent flares and induce remission, OM require continuous active surveillance as they can lead to blindness. Inflammatory bowel disease significantly increases the risk of OM. When divided by subtype, CD showed increased odds of developing OM, while UC showed no statistical association with OM. Coordination between specialists is essential to avoid or prevent OM in IBD

Characteristics	Column1 IBD Patients with Ocular Manifestations	Column2 IBD Patients without Ocular Manifestations	Column3 Total	Column4 P Value
	N=8169	N=3,474,827	N=3,482,996	
Patient Age, mean (SD)	50	52		$p < 0.05$
Sex				$p = 0.19$
Female	4,021 (59%)	1,968,876 (57%)	1,509,879 (43%)	
Male	2,853 (41%)	1,507,246 (43%)	1,973,117 (57%)	
Race N(%)				$p < 0.05$
White	5,085 (74%)	2,761,084 (79%)	2,766,196 (79%)	
Black	1,031 (15%)	374,726 (11%)	375,816 (11%)	
Hispanic	439 (6%)	208,353 (6%)	208,353 (6%)	
Asian or Pacific Islander	78 (1%)	38,585 (1%)	38,585 (1%)	
Native American	17 (0.2%)	13,557 (0.3%)	13,584 (0.3%)	
Other	224 (3%)	84,470 (2%)	84,637 (2%)	
Insurance, N(%)				$p = 0.06$
Medicare	2,528 (37%)	1,390,449 (40%)	1,392,850 (40%)	
Medicaid	1,019 (15%)	489,786 (14%)	490,754 (14%)	
Private	2,849 (45%)	1,440,853 (41%)	1,443,702 (41%)	
Uninsured	307 (4%)	155,383 (5%)	155,690 (4%)	
Household Median Income, N(%)				$p < 0.05$
1-38,999	1,645 (24%)	824,189 (23%)	825,819 (24%)	
39,000-47,999	1,504 (22%)	883,283 (25%)	884,681 (25%)	
48,000-62,900	1,774 (26%)	895,102 (26%)	896,872 (26%)	
>63,000	1,951 (28%)	873,550 (25%)	875,625 (25%)	
Bed Size, N(%)				$p < 0.05$
Small	731 (11%)	519,680 (15%)	520,360 (15%)	
Medium	1,341 (20%)	902,401 (26%)	903,838 (26%)	
Large	4,802 (70%)	2,054,040 (59%)	2,058,799 (59%)	
Hospital Region				$p < 0.05$
Northeast	1,609 (23%)	767,180 (22%)	768,697 (22%)	
Midwest	1,970 (29%)	877,721 (25%)	879,456 (25%)	
South	1,978 (29%)	1,247,233 (36%)	1,249,351 (36%)	
West	1,318 (19%)	583,988 (17%)	585,143 (17%)	
Hospital Location				$p < 0.05$
Rural	383 (6%)	303,118 (9%)	303,717 (9%)	
Urban	6,491 (94%)	3,173,004 (91%)	3,179,279 (91%)	
Hospital Teaching Status				$p < 0.05$
Teaching	1,774 (26%)	1,359,164 (39%)	1,360,807 (39%)	
Non-Teaching	5,087 (74%)	2,116,958 (61%)	2,122,190 (61%)	
Charlson Comorbidity Index, mean (SD)				$p = 0.12$
0	3,774 (55%)	1,938,981 (56%)	1,942,815 (56%)	
1	1,374 (20%)	654,554 (19%)	667,548 (19%)	
2	830 (12%)	371,250 (11%)	372,332 (11%)	
3	897 (13%)	511,338 (15%)	512,349 (15%)	
LOS, days (SD)	7 (6.55-7072)	6 (5.48-5.55)		$p < 0.05$
Mortality, N(%)	1% (0.009-0.22)	99% (0.97-0.99)		$p < 0.05$
Total Hospital Charges (SD)	60,377.87	546,007.79		$p < 0.05$

