Outcomes of Patients Hospitalized for Inflammatory Bowel Disease With Comorbid Generalized Anxiety Disorder

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Introduction

- Inflammatory Bowel Disease (IBD) encompasses Crohn's disease and ulcerative colitis
- Psychiatric stress, such as anxiety, has been linked to the development and exacerbation of IBD
- Anxiety is 39% more prevalent in hospitalized IBD patients compared to other hospitalized patients
- Generalized anxiety disorder (GAD) is a common form of anxiety among the U.S. population
- Currently, little data exist about the association between IBD and GAD, and the outcomes of IBD patients with comorbid GAD

Aim

- The purpose of this study is to assess the outcomes of hospitalized IBD patients with comorbid GAD

Methods

- Hospitalized IBD patients from the National Inpatient Sample database from 2014 were selected
- Diagnoses were identified with ICD-9 CM codes
- SPSS Premium Edition was used for analysis
- Patient demographics and outcomes of IBD were compared between the groups with and without GAD
- The outcomes of interest were hypotension/shock, sepsis, acute hepatic failure, acute respiratory failure, acute renal failure, myocardial infarction, acute deep vein thrombosis, ileus, inpatient mortality, colectomy, intestinal abscess, intestinal obstruction, and intestinal perforation
- Chi-square tests and independent t-tests were used to compare proportions and means respectively
- Multivariate logistic regression analysis was performed to determine if GAD is an independent predictor for the outcomes, adjusting for age, sex, race, and Charlson Comorbidity Index

Results

Table 1: Patient Demographics and Characteristics

Variable	With GAD	Without GAD	P-value
N = 28,173	N = 3,400	N = 24,773	
Patient age, mean (SD)	54.8 (19.2)	55.9 (21.5)	<0.001
Sex, N (%)			<0.001
Female	2,333 (68.8%)	11,478 (46.3%)	
Male	1,068 (31.4%)	13,293 (53.7%)	
Race, N (%)			<0.001
White	2,742 (86.1%)	17,782 (76.7%)	
Black	177 (5.6%)	2,307 (10.0%)	
Hispanic	18 (0.6%)	1,898 (8.2%)	
Asian or Pacific Islander	14 (0.4%)	406 (1.8%)	
Native American	73 (2.3%)	112 (0.5%)	
Other	73 (2.3%)	679 (2.9%)	
Length of stay, in days (SD)	6.6 (8.0)	6.8 (10.5)	0.264
Total hospital charges, in $ (SD)	56,313 (94,612)	68,784 (145,836)	<0.001
Charlson Comorbidity Index (SD)	2.45 (2.44)	2.65 (2.49)	<0.001

Table 2: Multivariate Regression Analysis of Outcomes

Outcomes	*Adjusted odds ratio	95% Confidence Interval	P-value
Hypotension/shock	0.94	0.84-1.06	0.306
Sepsis	1.33	1.17-1.50	<0.001
Acute hepatic failure	1.80	1.18-2.73	0.006
Acute respiratory failure	1.24	1.04-1.49	0.018
Acute renal failure	1.11	0.99-1.24	0.083
Myocardial infarction	1.18	0.87-1.62	0.278
Acute deep vein thrombosis	0.99	0.73-1.35	0.972
Ileus	1.05	0.88-1.24	0.613
Inpatient mortality	1.87	1.50-2.31	<0.001
Colectomy	1.06	0.69-1.63	0.760
Intestinal abscess	2.35	1.20-4.61	0.013
Intestinal obstruction	1.20	0.95-1.53	0.129
Intestinal perforation	1.44	1.06-1.95	0.019

***Adjusted for age, sex, race, and the Charlson Comorbidity Index**

Discussion and Conclusion

- This study indicates that in hospitalized IBD patients, GAD is a risk factor for sepsis, acute hepatic failure, acute respiratory failure, intestinal abscess, intestinal perforation, and inpatient mortality
- One possible explanation for these findings may be related to suboptimal adherence to medical therapy. 18% of IBD patients with comorbid psychiatric disease are partially or fully non-adherent to medical therapy
- GAD and its pharmacologic therapeutics can alter intestinal motility. Dysmotility can result in microbiome alterations. Microbiome disruption can increase the risk for IBD relapses, increasing the risk of complications
- IBD and GAD are both becoming increasingly more frequent, which will likely result in a larger number of complications among inpatients who have these comorbidities

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