



DOES THE PRESENCE OF SPECIFIC ALARMING SYMPTOMS AFFECT THE LENGTH OF STAY IN PATIENTS DIAGNOSED WITH ULCERATIVE COLITIS?

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BACKGROUND

Inflammatory Bowel Disease is notorious for being an expensive disease due to the increased burden of hospitalization requirements. It is imperative to identify factors that predict an increased length of stay to understand the underlying adverse outcome and proactively treat them. We hypothesize that a patient's length of stay may be dependent on presentation of several key "alarming symptoms."

METHODS

A retrospective analysis of the National Inpatient Sample 2001-2013 database was conducted, using patients diagnosed with ulcerative colitis (using International Classification of Disease, Ninth Revision [ICD-9] codes). Alarming symptoms were identified as abdominal pain, anal fissure or fistula, anemia, blood in stool, diarrhea, family history of inflammatory bowel disease, fever, oral aphthae, rectal bleeding, and weight loss. Patients who presented with multiple symptoms were separated as a separate group. A one-way analysis of variance (ANOVA) test was then used to compare the means for the length of stay in the different biopsy methods, with a significance level set at $p < 0.001$.

RESULTS

Table 1. Average Length of Stays for Patients with Specific Alarming Symptoms

Variable	N	Mean (95% CI)
Alarming Symptoms		
Abdominal Pain	10,485	4.01 (3.93-4.10)
Anal Fissure/Fistula	3,326	6.41 (6.19-6.64)
Anemia	89,847	6.36 (6.32-6.40)
Blood in stool	37,742	6.10 (6.04-6.17)
Diarrhea	11,421	5.33 (5.23-5.42)
Family Hx of IBD	1754	5.12 (4.92-5.32)
Fever	7,518	5.96 (5.83-6.08)
Oral Aphthae	530	6.55 (6.09-7.01)
Rectal Bleeding	16,390	5.71 (5.60-5.81)
Weight loss	8,731	6.40 (6.28-6.51)
Combination	34,981	6.02 (5.96-6.07)
Total	222,730	6.03 (6.00-6.05)

Table 2. Sum of squares, mean squares, and factor scores were calculated between alarming symptoms using One-way ANOVA.

	Sum of Squares	df	Mean Square	F	P-value
Between Groups	63,015.63	10	6,301.56	180.65	.000*
Within Groups	7,768,847.43	222,714	34.88		
Total	7,831,863.06	222,724			

*significance level $p < 0.001$

RESULTS

The total number of patients in our study population were 222,730. The mean (M) LOS, the standard deviations (SD), and sample size (n) for patients with abdominal pain were M = 4.01, SD = 4.63, n = 10,485, patients with anal fissure or fistula were M = 6.41, SD = 6.61, n = 3,326, patients with anemia were M = 6.36, SD = 5.94, n = 89,847, patients with blood in stool were M = 6.10, SD = 6.559, n = 37,742, patients with diarrhea were M = 5.33, SD = 5.21, n = 11,421, patients with family history of inflammatory bowel disease were M = 5.12, SD = 4.25, n = 1,754, patients with fever were M = 5.96, SD = 5.49, n = 7,518, patients with oral aphthae were M = 6.55, SD = 5.40, n = 530, patients with rectal bleeding were M = 5.71, SD = 6.89, n = 16,390, patients with weight loss were M = 6.40, SD = 5.50, n = 8,731 and patients with a combination of these symptoms were M = 6.02, SD = 5.28, n = 34,981. The ANOVA was significant at $p < 0.001$.

CONCLUSION

Length of stay is an important measure due to the health risks and financial burden each day has on the patient. Identifying factors that predict the increased LOS, such as weight loss, are important so that further research can be done to identify and prevent unnecessary expenditure. It is also important to discover which symptoms may not be alarm symptoms and are not associated with increased LOS such as abdominal pain.