



Predictors of Colectomy in Acute Severe Ulcerative Colitis

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BACKGROUND

- Up to 30% patients with acute severe ulcerative colitis (ASUC) require a colectomy
- We aimed to identify risk factors for colectomy in a cohort of ASUC patients from a large tertiary academic medical center

MATERIAL & METHODS

- Single-center, retrospective study of all patients hospitalized with ASUC between 01/01/2012-11/01/2021
- ASUC defined by the modified Truelove and Witts criteria
- Patients who underwent colectomy (during hospitalization or after discharge) were compared to patients who did not undergo colectomy
- Continuous variables were analyzed using unpaired student's t-test
- Categorical variables were analyzed using a chi-square test
- Variables with p<0.05 on univariate analysis were identified and incorporated in a multivariate regression model

RESULTS

- 168 patients (52.4% males; mean age 39.8 ± 17.2 yrs) were included
- Median disease duration was 2.5 years (IQR 1-10)
- 64.9% (n=109) of the cohort were biologic naïve
- 18.5% (n=31) required a colectomy
- Median follow-up time in the colectomy group was 26 months (IQR 11-56) compared to 25 months (IQR 12-48) in the group without colectomy
- Female sex (70.9% vs 42.3%, p=0.04) and oral corticosteroids on admission (70.9% vs 48.9%, p=0.02) were associated with colectomy
- Lower mean hemoglobin (10.5 vs 12 g/dl, p=0.002) and lower mean albumin levels (3.2 vs 3.5 g/dl, p=0.015) were also associated with colectomy
- Patients who were biologic naïve on admission were less likely to have a colectomy (41.9% vs 70.1%, p=0.003)

Table 1. Baseline characteristics

Variables	Colectomy (n=31)	No colectomy (n=137)	p-value
Patient characteristics			
Age, mean (SD)	40.5 (19.7)	39.6 (16.7)	0.82
Female, n (%)	22 (70.9)	58 (42.3)	0.004
Disease activity			
Pancolitis, n (%)	20 (64.5)	97 (70.8)	0.75
Disease duration in years, mean (SD)	6.3 (7.9)	6.9 (9.4)	0.71
Presence of extraintestinal manifestations, n (%)	1 (3.2)	12 (8.8)	0.29
Smoking, n (%)	2 (6.5)	7 (5.1)	0.58
Concomitant CMV infection, n (%)	2 (6.5)	1 (0.7)	0.08
Concomitant C. difficile infection, n (%)	1 (3.2)	8 (5.8)	0.56
Labs at presentation			
Hemoglobin g/dL, mean (SD)	10.5 (2.2)	12.0 (2.6)	0.002
C-reactive protein md/dL, mean (SD)	85.7 (61.2)	80.4 (84.9)	0.73
Albumin g/dL, mean (SD)	3.2 (0.7)	3.5 (0.6)	0.015
Medications			
Biologic naïve at time of presentation, n (%)	13 (41.9)	96 (70.1)	0.003
Inpatient infliximab rescue, n (%)	16 (51.6)	51 (37.2)	0.14
On oral corticosteroid at time of admission, n (%)	22 (70.9)	67 (48.9)	0.026
Statins on admission, n (%)	4 (12.9)	9 (6.6)	0.44
Chronic outpatient opioid use, n (%)	3 (9.7)	10 (7.3)	0.65
Inpatient opioid use, n (%)	17 (54.8)	72 (52.6)	0.82
On IMM on admission, n (%)	1 (3.2)	13 (9.5)	0.25

SD: standard deviation; CMV: cytomegalovirus; C. difficile: Clostridioides difficile; IMM: immunomodulator

- Multivariate logistic regression model included sex, oral corticosteroids on admission, hemoglobin <12 g/dL, albumin <3.5 g/dL, and prior biologic exposure at the time of presentation.
- Female sex was independently associated with a 3-fold increased odds of colectomy (OR 3.05, p=0.018).
- Hemoglobin level on presentation <12 g/dL was also associated with a 3-fold increased risk of colectomy (OR 3.23, p=0.014).
- Patients with prior biologic exposure at the time of presentation had an increased odds of colectomy (OR 3.48, p=0.008)

Table 2. Multivariable logistic regression showing odds ratios for association with colectomy

	Odds Ratio	p-value	Lower 95% CI	Upper 95% CI
Low albumin (<3.5 g/dL)	2.22	0.092	0.87	5.64
Low hemoglobin (<12 g/dL)	3.23	0.014	1.27	8.20
Female sex	3.05	0.018	1.21	7.73
Prior biologic exposure	3.48	0.008	1.39	8.71
PO steroids on presentation	0.49	0.138	0.19	1.25

CONCLUSIONS

- In our cohort, approximately one fifth of patients with acute severe UC required a colectomy.
- Female sex, hemoglobin <12 g/dl, and prior biologic exposure were independently associated with a higher risk of colectomy.
- Lower hemoglobin and prior biologic use could impact treatment outcomes with inpatient infliximab use. However, it is unclear why there is a gender difference in outcomes.