

INTRODUCTION

- Total proctocolectomy (TPC) with ileal pouch anal anastomosis (IPAA) is the most common surgical treatment for patients with ulcerative colitis (UC), whose symptoms are severe and persistent after conventional therapy and biologics.
- Pouchitis occurs in up to 80% of UC patients undergoing TPC with IPAA.
- Pathogenesis is unclear but is thought to involve a complex interaction between the microbiome and mucosal immune system.

AIM

- The aim of this study was to determine if a more robust immune response at the time of colectomy, manifested by acute severe ulcerative colitis (ASUC), may be associated with subsequent acute pouchitis.

METHODS

- We performed a retrospective cohort analysis of all patients with UC or IBD unclassified complicated by medically refractory disease or dysplasia who underwent TPC with IPAA at Mount Sinai Hospital between 1/2008 and 12/2017 and at least one subsequent pouchoscopy.
- Patients <18 years old or with a baseline diagnosis of Crohn's disease (CD) were excluded.
- ASUC was defined by the Truelove and Witts criteria.
- The primary outcome was development of acute pouchitis, defined according to the Pouchitis Disease Activity Index.
- Univariable cox regression was used to assess unadjusted relationships between hypothesized risk factors and acute pouchitis.
- Multivariable cox regression for the primary outcome of acute pouchitis was performed a priori with selection of the following clinically relevant variables: age, sex, ASUC admission, number of pre-colectomy biologics, and disease extent.

RESULTS

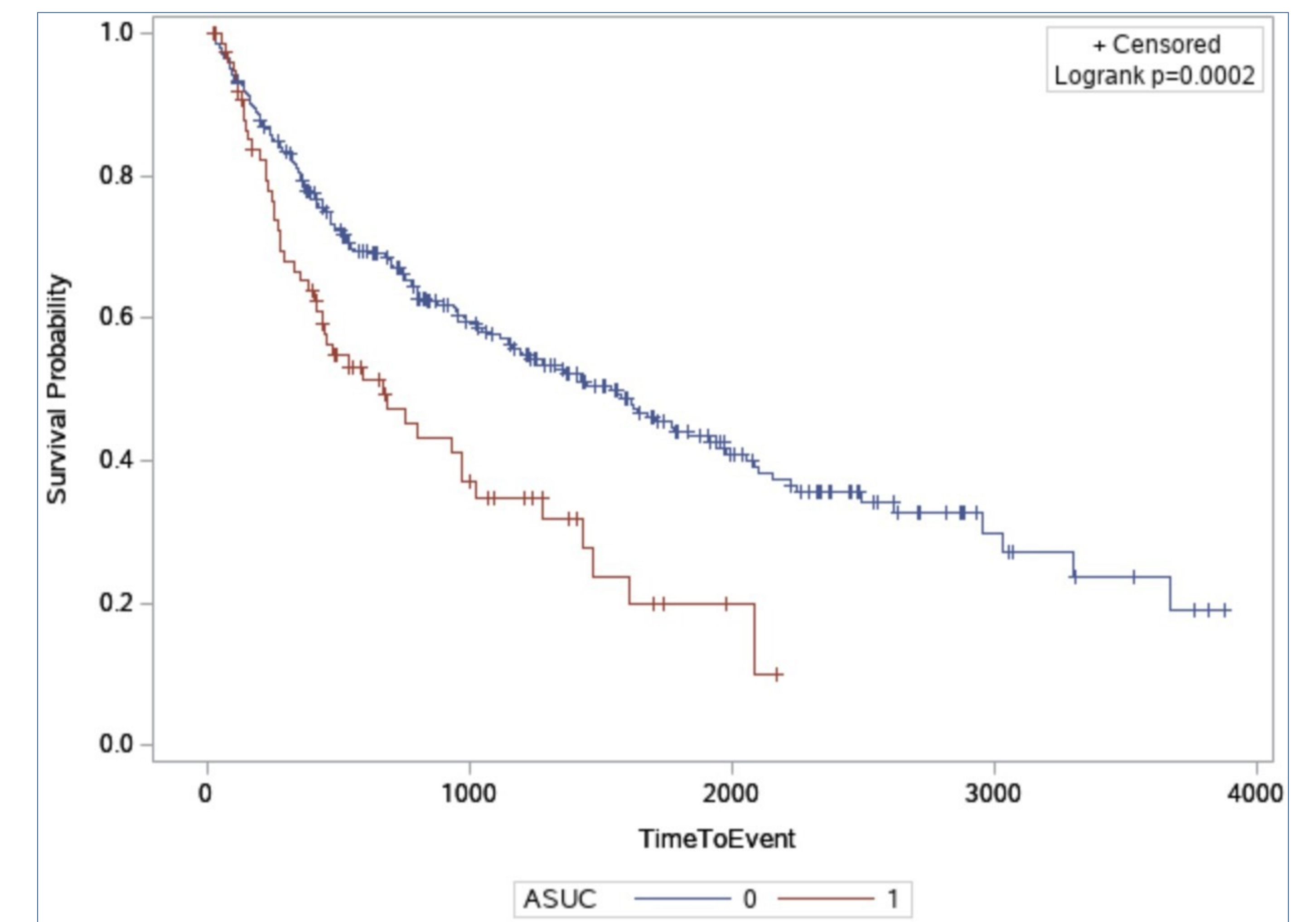
- A total of 416 patients aged 18 and older underwent TPC with IPAA at MSH and at least one subsequent pouchoscopy between 2008 and 2017.
- Biologics were used in 292 (70.2%) patients pre-colectomy, and disease extent was reported as extensive in 327 (78.6%).
- Urgent colectomy was performed in 165 (39.7%) patients, of whom 77 (46.7%) were admitted with ASUC.
- Of the 77 patients admitted with ASUC, 67 (87.0%) had at least one biologic exposure.
- Acute pouchitis occurred in 228 (54.8%) patients a median of 1.3 years after final surgical stage.
- Of 77 patients with ASUC, 47 (61.0%) developed pouchitis a median of 0.9 years after final surgical stage.

Table 1. Patient Demographics

Characteristics	N = 416 (%)
Age at colectomy, years [#]	35.4 [26.1-49.0]
Male	224 (53.8)
Pre-colectomy disease duration, years [#]	5.0 [1.9-12.0]
Biologics pre-colectomy	292 (70.2)
• Anti-TNF (adalimumab, infliximab)	274
• Vedolizumab	56
• Ustekinumab	3
Disease type	
• Ulcerative colitis	397 (95.4)
• Indeterminate colitis	14 (3.4)
Disease extent	
• Left sided	89 (21.4)
• Extensive	327 (78.6)
Colectomy indication	
• Medically refractory disease	367 (88.2)
• Dysplasia	49 (11.8)
ASUC admissions	77 (18.5)
Number of surgical stages	
• One	38 (9.1)
• Two	157 (37.7)
• Three	221 (53.1)

RESULTS

Figure 1. Kaplan-Meier estimates of developing acute pouchitis in patients with vs. without acute severe ulcerative colitis



- ASUC (HR 1.53 95%CI (1.06-2.22)) and a greater number of biologics pre-colectomy (HR 1.30 95% CI (1.05-1.62) were associated with an increased probability of acute pouchitis
- Older age at colectomy (HR 0.98 95% CI (0.97-0.99)) was associated with a decreased probability of acute pouchitis.

STRENGTHS/LIMITATIONS

- Strengths:
 - Systematic review of all pouchoscopy procedures by investigators blinded to outcomes
- Limitations:
 - Retrospective study subject to selection bias

CONCLUSIONS

- ASUC and greater use of biologics pre-colectomy were associated with the development of acute pouchitis. Both are surrogates for severe disease and immune activation. Hence, pouchitis may be driven by the propensity to inflammation that exists with both.