Ustekinumab Versus Tofacitinib as Second-Line Therapy for Ulcerative Colitis: A Retrospective, Observational Study

John Galatowitsch, MD[1]; John P. Haydek, MD[2]; Waseem Ahmed, MD[2]; Blair Fennimore, MD[2]; Debbie Cheng, MD[2]
Calen A. Steiner, MD[2]; Benjamin Click, MD[2]; Mark E. Gerich, MD[2]; Alexis Oonk, FNP[2]; Frank I. Scott, MD[2]

1 Department of Medicine, University of Colorado School of Medicine, Aurora, Colorado; 2 Division of Gastroenterology, University of Colorado School of Medicine, Aurora, Colorado

University of Colorado Anschutz Medical Campus

uchealth

INTRODUCTION

- Treatment options for Ulcerative Colitis (UC) have expanded rapidly over the past two decades.
- However, optimal positioning of these agents, particularly after prior biologic failure, remains uncertain.
- **The goal of this study was to assess the clinical effectiveness and medication persistence rates of ustekinumab compared to tofacitinib in UC patients with prior biologic exposure.**

	Ustekinumab	Tofacitinib
Patients	30	30
AGE		
Median, Years	42.5	38.5
IQR, Years	32.5 - 55.0	29.0 - 46.5
SEX		
Male, Percent	50.0	56.0
Female, Percent	50.0	44.0
RACE		
White, Percent	86.7	93.3
Asian, Percent	3.3	0.0
More than One Race, Percent	3.3	3.3
Unknown Race, Percent	6.7	3.3
ETHNICITY		
Hispanic or Latino Ethnicity, Percent	10.0	6.7
DISEASE DURATION		
Median, Years	6	6
IQR, Years	3.3 - 11.0	4.0 - 9.8
DISEASE DISTRIBUTION		
Extensive Colitis (E3), Percent	63.3	83.3
Left-sided Colitis (E2), Percent	36.7	16.7
Proctosigmoiditis (E1), Percent	0.0	0.0
SMOKING STATUS		
Active Smoker, Percent	0.0	0.0
PRIOR FAILED THERAPIES		
Mean Number of Failed Therapies	2.3	3.2
Failed 1 Biologic, Percent	53.3	20.0
Failed 2 Biologics, Percent	36.7	46.7
Failed 3+ Biologics, Percent	10.0	33.3
Failed TNF Inhibitor, Percent	76.7	96.7
Failed Vedolizumab, Percent	63.3	73.3
Failed Immunosuppressant, Percent	66.7	80.0
BASELINE PARTIAL MAYO SCORE		
Median	4.0	5.5
IQR	3.0 - 6.0	4.0 - 7.0
Baseline Rectal Bleeding, Percent	43.8	73.3
BASELINE STEROID USE		
Steroid Utilization, Percent	60.0	76.7
Prednisone Utilization, Percent	36.7	70.0
Budesonide Utilization, Percent	16.7	3.3
BASELINE NON-BIOLOGIC THERAPIES		
Immunosuppressant Utilization, Percent	3.3	3.3
Aminosalicylate Utilization, Percent	10.0	10.0

Table 1: Baseline Characteristics

METHODS

- **Population & Inclusion Criteria**
  - Adult patients with Ulcerative Colitis followed at a tertiary ambulatory referral center with previous failure of anti-TNF therapies or vedolizumab who then took either ustekinumab or tofacitinib were eligible for inclusion (n=30 in each cohort)
  - Followed for up to 12 months, with last visit carried forward
- **Exclusion Criteria** - Prior colectomy or bowel surgery
- **Outcomes**
  - Clinical Remission: Defined as Partial Mayo Score ≤ 3
  - Steroid-free Clinical Remission
  - Medication Persistence
  - Median follow up time: 149 days (Uste) 190 days (Tofa)

RESULTS

Outcome	Ustekinumab	Tofacitinib	P-Value
Clinical remission (Partial Mayo ≤ 3)	66.7%	56.7%	0.60
Steroid-free Clinical Remission	56.7%	43.4%	0.44
Medication Persistence	90.0%	76.7%	0.16

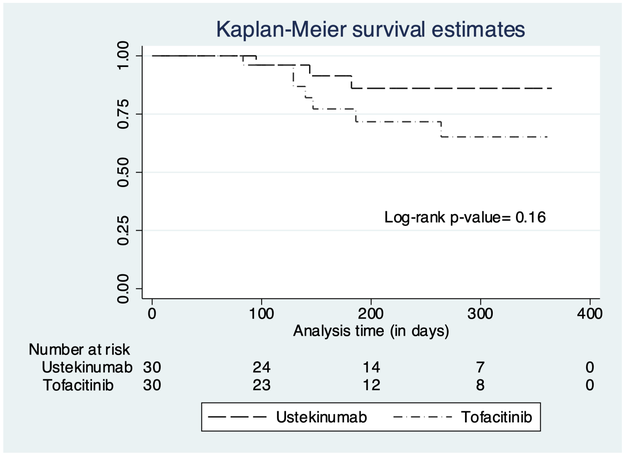

Figure 1: Kaplan-Meier Survival curves of medication persistence comparing ustekinumab to tofacitinib after prior biologic failure in ulcerative colitis

DISCUSSION & CONCLUSIONS

- In this retrospective cohort study, rates of clinical remission and medication persistence were similar between ustekinumab and tofacitinib in individuals who had failed prior biologic therapy.
- Overall, the tofacitinib cohort was slightly sicker at baseline (Partial Mayo Average of 5.5 versus 4.0) and had failed more biologic therapies (3.2 versus 2.5) when compared to the ustekinumab cohort.
- Adverse event rates were similar between groups and neither showed a predilection for severe events in this study.
- Larger prospective studies with adjustment for confounding by channeling bias are required to best elucidate the ideal position for these therapies after failure of an initial biologic therapy.

Conclusions

- Tofacitinib and ustekinumab were shown to be similarly effective options for treating ulcerative colitis in patients who have failed prior biologic therapy

REFERENCES

- Lewis, J. D., et al. (2008). Use of the noninvasive components of the Mayo score to assess clinical response in ulcerative colitis. *Inflammatory Bowel Diseases*, *14*(12), 1660–1666.
- Sandborn, W. J., et al. (2017). Tofacitinib as induction and maintenance therapy for ulcerative colitis. *New England Journal of Medicine*, *376*(18), 1723–1736.
- Sands, B. E., et al. (2019). Ustekinumab as induction and maintenance therapy for ulcerative colitis. *New England Journal of Medicine*, *381*(13), 1201–1214.
- Singh, S., et al. (2020). First- and second-line pharmacotherapies for patients with moderate to severely active ulcerative colitis: An updated network meta-analysis. *Clinical Gastroenterology and Hepatology*, *18*(10).