Supplementary Table 3. Evidence Table of Primary Observational Studies

Study	Design	Patients (prior anti-TNF exposure/n)	Interventions (n)	Comparators (n)	Primary outcomes
Feagan (2019)[22]	Prospective observational Multinational	Data from GEMINI 1: clinical remission by week 14 (329/769)	Maintenance phase of GEMINI 1 (620) Week 6 responders to VDZ: either q 4 weeks or 8 weeks Week 6 non-responders to VDZ: q 4 weeks	Placebo (149)	• Weeks 14 to 52 sustained clinical remission: VDZ vs. placebo (66.5% vs. 26.7%; Δ39.8%; 95% CI, 22.7-56.9) Prior anti-TNF failure: VDZ vs. placebo (62.3% vs. 40.0%; Δ22.3%; 95% CI, -10.8 to 55.6[a])
Adedokun (2020)[23]	Prospective observational Multinational	Moderate-to-severe UC (117/348)	Maintenance: UST 90 mg SC q 8 weeks (176)	Maintenance: UST 90 mg SC q 12 weeks (172)	• Median trough serum UST concentrations: 90 mg SC q 8 weeks vs. SC q 12 weeks (2.7-3.1 μg/mL vs. 0.9-1.2 μg/mL)
Xu (2020)[24]	Prospective observational Multinational	Data from UNIFI (431/823)	UST 130 mg IV, then 90 mg SC q 8 weeks (320)	UST 6 mg/kg IV, then 90 mg SC q 12 weeks (319)	• Median steady-state trough concentrations: UST 90 mg SC q 12 weeks vs. SC q 8 weeks (0.76 μg/mL vs. 2.3 μg/mL)
Hu (2020)[25]	Case-control Multinational	Moderate-to-severe UC (345/363)	UST combination with AZA (120)	UST monotherapy (243)	• Week 14 clinical response: combination therapy vs. monotherapy (54.6% vs. 65.8%; *P*=0.08) • Week 30 clinical response: combination therapy vs. monotherapy (71.6% vs. 77.4%; *P*=0.33) • Week 54 clinical response: combination therapy vs. monotherapy (62.1% vs. 67.0%; *P*=0.52)
Sands (2020)[26]	Prospective Observational Multinational	Data from OCTAVE Open (55/123)	TFC dose de-escalation: 66 TFC dose escalation: 57	NA	• After TFC de-escalation: 92.4% and 84.1% of patients maintained clinical response and 80.3% and 74.6% maintained remission, at months 2 and 12, respectively. • After dose escalation, 57.9% and 64.9% of patients recaptured clinical response and 35.1% and 49.1% were in remission, at months 2 and 12, respectively.
Honap (2020)[27]	Retrospective observational UK	Moderate-to-severe UC (59/134)	TFC 10 mg b.i.d. at least 8 weeks, followed by 5 mg b.i.d.	NA	• Week 8 clinical response: 73.9% • Week 22 steroid-free remission: 43.5%
Colombel (2020)[28]	Prospective observational Multinational	Data from OCTAVE Open (60/142)	TFC 5 mg b.i.d. during OCTAVE Open, following a 52-week OCTAVE Sustain	NA	• 12-month clinical remission, endoscopic improvement, and clinical response: 68.3%, 73.9%, and 77.5%, respectively. • 36-month clinical remission, endoscopic improvement, and clinical response: 50.4%, 55.3%, and 56.0%, respectively.
Goll (2019)[29]	Prospective observational Norway	NOR-SWITCH extension (380)	Switch to CT-P13 at week 52 through 78 weeks (183; UC 38)	Maintenance CT-P13 (197; UC 42)	• Disease worsening: maintenance vs. switch (16.8% vs. 11.6%; Δ5.9%; 95% CI, -1.1 to 12.9)
Gustavsson (2010)[30]	Retrospective observational Sweden and Denmark	Acute severe UC (0/45)	IFX 5 mg/kg single dose (24)	Placebo (21)	• 3-year colectomy rate: IFX vs. placebo (50.0% vs. 76.2%; *P*=0.012) **Colectomy rate in patients with endoscopic remission vs. not in remission at 3-month (0% vs 50.0%; *P*=0.02)**
Nalagatla (2019)[31]	Case-control USA	Acute severe UC (0/213)	Accelerated dose: IFX >5 mg/kg infliximab at shorter intervals through 24 weeks (81)	Standard dose: IFX 5 mg/kg at weeks 0, 2, and 6 (132)	• In-hospital colectomy rate: accelerated vs. standard IFX (9% vs. 8%; adjusted OR, 1.35; 95% CI, 0.38-4.82) • 3-, 6-, 12-, or 24-month colectomy rates: no significant difference (*P*>0.20 for all comparisons)

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Supplementary Table 3. Continued

Study	Design	Patients (prior anti-TNF exposure/n)	Interventions (n)	Comparators (n)	Primary outcomes
Sebastian (2019)[32]	Case-control propensity score-matched UK	Acute severe UC (0/131)	Accelerated IFX induction (29)	Standard IFX induction (102)	• 30-day colectomy rates: accelerated induction vs. standard induction (27% vs. 57%; *P*=0.048) • Overall colectomy rates: accelerated induction vs. standard induction (31% vs. 57; *P*=0.09)
Shah (2018)[33]	Case-control propensity score-matched USA	Acute severe UC (0/146)	High dose IFX: 10 mg/kg (26)	Standard dose IFX: 5 mg/kg (120)	• 30-day colectomy rates: standard dose vs. high dose (17.5% vs. 15.4%; *P*=0.53)
Gibson (2020)[34]	Case-control Ireland	Acute severe UC (0/145)	Accelerated IFX dose (58)	Standard IFX dose cohort 1 (year 2010-2013) (87) Standard IFX dose cohort 2 (year 2014-2017) (55)	• Time to colectomy compares with accelerated dose: standard dose cohort 1, shorter time (log rank *P*=0.0013); standard dose cohort 2, no significant difference (log rank *P*=0.32)
Lau (2015)[35]	Retrospective observational USA	IBD (217; UC 94)	Serum anti-TNF drug level detectable (UC 17)	Serum anti-TNF drug level undetectable (UC 77)	• Infectious complications: detectable vs. undetectable (9.3% vs. 11.8%; *P*=0.78) • Overall postoperative morbidity: detectable vs. undetectable (39.5% vs. 47.1%; *P*=0.59)
Zittan (2016)[36]	Retrospective observational Canada	IPAA for UC (758)	Preoperative anti-TNF exposure (196)	Anti-TNF naïve (596)	• Postoperative IPAA leak rate: anti-TNF exposure vs. naïve (13.2% vs. 11.7%; *P*=0.44)
Abelson (2018)[37]	Retrospective observational USA	Surgery for UC (7,070)	Surgery between year 2006-2013 (3,267)	Surgery between year 1995-2005 (3,803)	• Major event: after vs. before the year 2005 (5.3% vs. 7.4%; OR, 1.42; 95% CI, 1.13–1.78) • Procedural complications; after vs. before the year 2005 (9.9% vs. 12.3%; OR, 1.42; 95% CI, 1.20–1.68)
Ward (2018)[38]	Retrospective observational UK	Subtotal colectomy for UC (6,225)	Anti-TNF exposure within 12 weeks (753) or within 4 weeks (418) prior to surgery	Anti-TNF naïve (5,472)	• Postoperative complications: anti TNF exposure within 12 weeks or within 4 weeks vs. naïve (12.4% or 12.9% vs. 12.0%; *P*=0.696 and *P*=0.571, respectively)
El-Hussuna (2018)[39]	Prospective observational Denmark	Major abdominal surgery for IBD (46; UC 14)	Anti-TNF exposure (18; UC 5)	Anti-TNF naïve (28; UC 9)	• Postoperative complications: anti-TNF exposure vs. naïve (27.8% vs. 28.6%; *P*>0.05)
Novello (2020)[40]	Prospective observational case-matched USA	Abdominal surgery for IBD (980)	VDZ exposure (95; UC 59)	VDZ naïve (95; UC 59)	• Overall morbidity: VDZ vs. naïve (54.7% vs. 47.4%; OR, 1.3; 95% CI, 0.76-2.3; *P*=0.32) • Any infection; VDZ vs. naïve (12.6% vs. 20.0%; OR, 0.53; 95% CI, 0.23-1.3; *P*=0.15)

[a]Prior anti-TNF exposure or failure.
TNF, tumor necrosis factor; VDZ, vedolizumab; CI, confidence interval; UC, ulcerative colitis; UST, ustekinumab; SC, subcutaneous; IV, intravenous; AZA, azathioprine; TFC, tofacitinib; IFX, infliximab; OR, odds ratio; IBD, inflammatory bowel disease; IPAA, ileal pouch-anal anastomosis; NA, not available; q, every day; b.i.d., twice a day.