

SUPPLEMENTARY TABLES**Supplementary Table 1. List of Partnering Patient and Professional Organizations**

Agrupación Chilena de Trabajo en Enfermedad de Crohn y Colitis Ulcerosa (ACTECCU)
American College of Gastroenterology (ACG)
American Gastroenterological Association (AGA)
Asian Organization for Crohn's and Colitis (AOCC)
Asia-Pacific Association of Gastroenterology (APAGE)
BRICS IBD Consortium
Canadian Association of Gastroenterology
Consultant360 Specialty Network
Crohn's and Colitis Foundation
Crohn's and Colitis Australia (CCA)
Crohn's and Colitis Canada (CCC)
Crohn's and Colitis India (CCI)
Crohn's and Colitis New Zealand (CCNZ)
Crohn's & Colitis UK
European Crohn's and Colitis Organisation (ECCO)
European Federation of Crohn's & Ulcerative Colitis Associations (EFCCA)
Grupo Argentino de Estudio de Enfermedad de Crohn y Colitis Ulcerosa
Grupo de Estudio de Crohn y Colitis Colombiano
Grupo de Estudos de Doença Inflamatória Intestinal do Brasil (GEDIIB)
Grupo uruguayo de trabajo en enfermedad inflamatoria intestinal (GUTEII)
Grupo Venezolano de Trabajo en Enfermedad Inflamatoria Intestinal
Hong Kong IBD Society (HKIBS)
ImproveCareNow
Indian Society of Gastroenterology
International Organization for the Study of Inflammatory Bowel Disease (IOIBD)
Japanese IBD Society
Korean Society for the Study of Intestinal Diseases
Malaysia Society of Gastroenterology
National Taiwan GI society
North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN)
Pan American Crohn's and Colitis Organization (PANCCO)
Pediatric Inflammatory Bowel Disease Network (PIBD-NET)
Taiwan IBD society
The Gastroenterological Society of Australia (GESA)
The Gastroenterology & Hepatology Advanced Practice Providers (GHAPP)
The New Zealand Society of Gastroenterology (NZSG)
United European Gastroenterology (UEG)

Supplementary Table 2. List of Countries Contributing 10 or more cases to SECURE-IBD

Country	N
United States	496
Spain	239
France	96
Italy	72
United Kingdom	66
Russian Federation	60
Iran, Islamic Republic of	57
Brazil	41
Belgium	37
Germany	34
Netherlands	25
Canada	24
Switzerland	23
Portugal	21
Israel	16
Austria	15
Ireland	15
Chile	12

Countries contributing less than 10 cases: Turkey, Czech Republic, Dominican Republic, Norway, Greece, Australia, Finland, Japan, Cyprus, India, Argentina, Bulgaria, Egypt, Mexico, Malaysia, Qatar, United Arab Emriates, Bahrain, China, Colombia, Croatia, Hungary, Kazakhstan, New Zealand, Poland, Romania, Serbia, Sweden, Slovenia

Supplementary Table 3. Demographics and Clinical Characteristics of COVID-19 IBD Patients Treated with TNF Antagonists Compared to Patients Not Treated with TNF Antagonists

Characteristic ¹	TNF Antagonist n=546	No TNF Antagonist n=869	P value
Mean Age, years (SD)	39.5 (16.2)	46.8 (17.8)	<0.001
Female, n (%)	257 (47.1)	410 (47.2)	0.88
Race			
White, n (%)	452 (82.8)	711 (81.1)	0.64
Asian, n (%)	22 (4)	63 (7.2)	0.01
Black, n (%)	43 (7.9)	51 (5.9)	0.14
Ethnicity			
Hispanic, n (%)	90 (16.5)	155 (17.8)	0.87
CD, n (%)	377 (69)	407 (46.8)	<0.001
UC/IBD-U, n (%)	169 (31)	462 (53.2)	
Disease Activity			0.07
Remission, n (%)	335 (61.4)	477 (54.9)	
Mild, n (%)	89 (16.3)	165 (19)	
Moderate/Severe, n (%)	107 (19.6)	191 (22)	
Missing/Unknown, n (%)	15 (2.7)	36 (4.1)	
Current smoker, n (%)	23 (4.2)	44 (5.1)	0.46
Any Comorbidity, n (%)	165 (30.2)	361 (41.5)	<0.001
Cardiovascular Disease, n (%)	28 (5.1)	79 (9.1)	0.01
Diabetes, n (%)	13 (2.4)	69 (7.9)	<0.001
Cancer, n (%)	2 (0.4)	31 (3.6)	<0.001
BMI \geq 30 kg/m ² , n (%)	92 (16.8)	143 (16.5)	0.07
Mesalamine/Sulfasalazine, n (%)	75 (13.7)	357 (41.1)	<0.001
Thiopurine, n (%)	136 (24.9)	140 (16.1)	<0.001
Corticosteroid, n (%)	33 (6)	77 (8.9)	0.05
Severe COVID-19, n (%)	21 (3.8)	90 (10.4)	<0.001

Death from COVID-19 or related complications, n (%)	6 (1.1)	42 (4.8)	<0.001
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1. Percentages and n from each subcategory may not add up to the exact number of total reported cases due to missing values and/or non-mutually exclusive variables.

TNF: tumour necrosis factor; SD: standard deviation; CD: Crohn's disease; UC: ulcerative colitis; IBD-U: inflammatory bowel disease unclassified; BMI: body mass index

Supplementary Table 4. Reduced Model with Adjusted Analysis Comparing the Impact of TNF Antagonist Monotherapy with Thiopurine Monotherapy and Combination Therapy on Risk of Severe COVID-19

Parameter*	Adjusted OR	95% CI lower limit	95% CI upper limit	P value
Combination therapy	3.54	1.63	7.69	0.001
Thiopurine monotherapy	3.59	1.29	9.96	0.014
ref=TNF antagonist monotherapy				
Age	1.04	1.02	1.07	0.0003
Cardiovascular disease (yes vs. no)	3.29	1.73	6.30	0.0003
Corticosteroid use (yes vs. no)	4.63	1.82	11.79	0.001

*Variables selected using backward selection. Initial variables include age, sex, race (Asian vs. non-Asian), disease type, disease activity, cardiovascular disease, corticosteroids, sulfasalazine/mesalamine. OR: odds ratio; CI: confidence interval

Supplementary Table 5. Demographics and Clinical Characteristics of COVID-19 IBD Patients Treated with Mesalamines, TNF Antagonists, or the Combination

Characteristic ¹	5-ASA/Sulfasalazine without TNF Antagonist n=357	TNF Antagonist without 5-ASA/Sulfasalazine N=471	P value ²	Combination N=75	P value ³
Mean Age, years (SD)	50.1 (18.8)	38.5 (16.1)	<0.001	45.3	0.001
Female, n (%)	162 (45.4)	215 (45.6)	0.86	42 (56)	0.11
Race					
White, n (%)	305 (85.4)	390 (82.8)	0.38	62 (82.7)	0.98
Asian, n (%)	43 (12)	11 (2.3)	<0.001	11 (14.7)	<0.001
Black, n (%)	12 (3.4)	42 (8.9)	0.001	1 (1.3)	0.02
Ethnicity					
Hispanic, n	77 (21.6)	77 (16.3)	0.03	12 (17.3)	0.32
CD, n (%)	77 (21.6)	355 (75.4)	<0.001	22 (29.3)	<0.001
UC/IBD-U, n (%)	270 (75.6)	110 (23.4)		52 (69.3)	
Disease Activity					
Remission, n (%)	200 (56)	304 (64.5)	0.09	31 (41.3)	0.001
Mild, n (%)	72 (20.2)	75 (15.9)		14 (18.7)	
Moderate/Severe, n (%)	72 (20.2)	80 (17)		27 (36)	
Missing/Unknown, n (%)	13 (3.6)	12 (2.6)		3 (4)	
Current smoker, n (%)	12 (3.4)	21 (4.5)	0.42	2 (2.7)	0.47
Any Comorbidity, n (%)	159 (44.5)	135 (28.7)	<0.001	30 (40)	0.047
Cardiovascular Disease, n (%)	46 (12.9)	23 (4.9)	<0.001	5 (6.7)	0.52
BMI \geq 30 kg/m ² , n (%)	53 (14.8)	76 (16.1)	0.17	16 (21.3)	0.54
Corticosteroid, n (%)	34 (9.5)	22 (4.7)	0.006	11 (14.7)	0.001

Severe COVID-19, n (%)	27 (7.6)	6 (1.3)	<0.001	0 (0)	0.57
Death from COVID-19 or related complications, n (%)	53 (14.8)	14 (3)	<0.001	7 (9.3)	0.008

1. Percentages and n from each subcategory may not add up to the exact number of total reported cases due to missing values and/or non-mutually exclusive variables.
2. P value comparing 5-ASA/sulfasalazine without TNF antagonist to TNF antagonist without 5-ASA/sulfasalazine
3. P value comparing combination of TNF antagonist and 5-ASA/sulfasalazine to TNF antagonist without 5-ASA/sulfasalazine

5-ASA: 5-aminosalicylates (mesalamine); SD: standard deviation; CD: Crohn's disease; UC: ulcerative colitis; IBD-U: inflammatory bowel disease unclassified; BMI: body mass index; TNF: tumour necrosis factor

Supplementary Table 6. Demographics and Clinical Characteristics of COVID-19 IBD Patients Treated with TNF Antagonist or IL12/23 Antagonist Monotherapy

Characteristic ¹	TNF Antagonist Monotherapy n=409	IL12/23 Antagonist Monotherapy n=119	P value
Mean Age, years (SD)	38.5 (16.2)	39.7 (14.5)	0.47
Female, n (%)	194 (47.4)	67 (56.3)	0.14
Race			
White, n (%)	337 (82.4)	91 (76.5)	0.65
Asian, n (%)	10 (2.4)	1 (0.8)	0.28
Black, n (%)	35 (8.6)	8 (6.7)	0.52
Ethnicity			
Hispanic, n (%)	63 (15.4)	15 (12.6)	0.64
CD, n (%)	291 (71.1)	108 (90.8)	0.19
UC/IBD-U, n (%)	118 (28.9)	11 (0.8)	
Disease Activity			
Remission, n (%)	258 (63.1)	62 (52.1)	0.19
Mild, n (%)	69 (16.9)	21 (17.6)	
Moderate/Severe, n (%)	71 (17.3)	31 (27)	
Missing/Unknown, n (%)	11 (2.7)	5 (4.2)	
Current smoker, n (%)	16 (3.9)	7 (5.9)	0.35
Any Comorbidity, n (%)	114 (27.9)	48 (40.3)	0.009
Cardiovascular Disease, n (%)	15 (3.7)	6 (5)	0.50
BMI \geq 30 kg/m ² , n (%)	62 (15.2)	25 (21)	0.19
Corticosteroid, n (%)	16 (3.9)	9 (7.6)	0.10
Severe COVID-19, n (%)	9 (2.2)	4 (3.4)	0.47
Death from COVID-19 or related complications, n (%)	3 (0.7)	1 (0.8)	0.86

Supplementary Table 7. Adjusted Analyses Comparing the Impact of Different Biologic Classes on Severe COVID-19

Medication Comparison	OR (95% CI)	aOR (95% CI)	P value ³	Total n in model	N with severe COVID-19	N without severe COVID-19
IL12/23 antagonist monotherapy (ref=TNF antagonist monotherapy) ¹	1.63 (0.66-4.04)	0.98 (0.12-8.06)	0.98	528	13	515
Integrin antagonist monotherapy (ref=TNF antagonist monotherapy) ²	2.90 (1.09-7.74)	2.42 (0.59-9.96)	0.22	532	18	514

1. Model adjusted for age, sex, disease type, cardiovascular disease, corticosteroids, sulfasalazine/mesalamine
2. Model adjusted for age, sex, disease type, number of comorbidities (0, 1, 2+), corticosteroids, sulfasalazine/mesalamine
3. P value for adjusted model

TNF: tumour necrosis factor; IL12/23: interleukin-12/23; OR: odds ratio, CI: confidence interval; aOR: adjusted OR

Supplementary Table 8. Demographics and Clinical Characteristics of COVID-19 IBD Patients Treated with TNF Antagonist or Integrin Antagonist Monotherapy

Characteristic	TNF Antagonist Monotherapy n=407	Integrin Antagonist Monotherapy n=125	P value
Mean Age, years (SD)	38.6 (16.2)	45.9 (19.3)	<0.001
Female, n (%)	193 (47.4)	65 (52)	0.41
Race			
White, n (%)	335 (82.3)	103 (82.4)	0.98
Asian, n (%)	10 (2.5)	4 (3.2)	0.65
Black, n (%)	35 (8.6)	9 (7.2)	0.62
Ethnicity			
Hispanic, n (%)	63 (15.5)	14 (11.2)	0.01
CD, n (%)	290 (71.3)	55 (44)	<0.001
UC/IBD-U, n (%)	117 (28.7)	70 (56)	
Disease Activity			
Remission, n (%)	257 (63.1)	67 (53.6)	0.18
Mild, n (%)	69 (17)	22 (17.6)	
Moderate/Severe, n (%)	70 (17.2)	29 (23.2)	
Missing/Unknown, n (%)	11 (2.7)	7 (5.6)	
Current smoker, n (%)	16 (3.9)	5 (4)	0.97
Any Comorbidity, n (%)	114 (28)	45 (36)	0.09
Cardiovascular Disease, n (%)	15 (3.7)	6 (4.8)	0.58
Diabetes, n (%)	7 (1.7)	8 (6.4)	0.006
Cancer, n (%)	2 (0.5)	5 (4)	0.003
Stroke, n (%)	0 (0)	3 (2.4)	0.002
Chronic kidney disease, n (%)	4 (1)	5 (4)	0.02
BMI \geq 30 kg/m ² , n (%)	61 (15)	23 (18.4)	0.49
Corticosteroid, n (%)	16 (3.9)	5 (4)	0.97
Severe COVID-19, n (%)	9 (2.2)	9 (7.2)	0.03
Death from COVID-19 or related complications, n (%)	3 (0.7)	4 (3.2)	0.02

