

Supplementary Table 1 ICD Codes used for inclusion, exclusion, and comorbidities in the study

Diagnosis	ICD-10 Codes
Inclusion	
Crohn's disease	K50
Ulcerative Colitis	K51
Exclusion	
Human Immunodeficiency Virus (HIV) disease	B20
Malignant neoplasms of lymphoid, hematopoietic, and related disease	C81-C96
Neoplasms	C00-D49
Decreased white blood cell count	D72.819
Comorbidities	
Nicotine dependence	F17
Alcohol abuse	F10.1
Type 2 diabetes mellitus	E11
Hypertensive diseases	I10-I1A
Chronic kidney disease	N18
Psoriasis	L40
Rheumatoid arthritis	M06.9
Systemic lupus erythematosus	M32

Supplementary Table 2 ICD Codes used for outcomes in the study

Diagnosis	ICD-10 Codes
Hodgkin lymphoma	C81
Follicular Lymphoma	C82
Non-Follicular lymphoma	C83
Mature T/NK-cell lymphomas	C84
Non-Hodgkin lymphoma	C85
Other T/NK cell lymphomas	C86
B-cell lymphoma	C82, C83, C85, C88
T-cell and NK-cell lymphoma	C84, C86

Supplementary Table 3 Baseline Characteristics of patients with Ulcerative Colitis (UC) taking Thiopurines and patients with Ulcerative Colitis Disease (UC) taking 5-Aminosalicylic Acid (5-ASA) and not taking thiopurines or biologics

Characteristics	Before PSM					After PSM						
	UC	with	UC	with	5-	Standardized	UC	with	UC	with	5-	Standardized
	Thiopurines		ASA			Mean	Thiopurines		ASA			Mean
						Difference						Difference
N total	12622		55873				12334		12334			

Age, Mean ± SD, years	45.3 ± 19.4	47.7 ± 20.1	0.1238	45.4 ± 19.4	46.0 ± 19.8	0.0346
Sex						
Male, N (%)	6465 (51.67%)	25732 (46.57%)	0.1022	6373 (51.67%)	6485 (52.58%)	0.0182
Female, N (%)	6033 (48.21%)	29481 (53.35%)	0.1029	5946 (48.21%)	5832 (47.28%)	0.0185
Race						
White, N (%)	9728 (77.74%)	41442 (75.00%)	0.0647	9584 (77.70%)	9804 (79.49%)	0.0435
Black or African American, N (%)	909 (7.26%)	4709 (8.52%)	0.0466	895 (7.26%)	773 (6.27%)	0.0394
Asian, N (%)	368 (2.94%)	1774 (3.21%)	0.0156	364 (2.95%)	310 (2.51%)	0.0269
American Indian or Alaska Native, N (%)	49 (0.39%)	191 (0.35%)	0.0076	49 (0.40%)	37 (0.30%)	0.0165
Native Hawaiian or Other Pacific Islander, N (%)	31 (0.25%)	101 (0.18%)	0.0140	31 (0.25%)	20 (0.16%)	0.0196
Unknown race, N (%)	1057 (8.45%)	5235 (9.47%)	0.0359	1047 (8.49%)	1060 (8.59%)	0.0038
Ethnicity						

Hispanic or Latino, N (%)	790 (6.31%)	3297 (5.97%)	0.0145	777 (6.30%)	680 (5.51%)	0.0334
Not Hispanic or Latino, N (%)	9170 (73.28%)	39709 (71.86%)	0.0319	9034 (73.25%)	9183 (74.45%)	0.0275
Unknown Ethnicity, N (%)	2553 (20.40%)	12253 (22.17%)	0.0433	2523 (20.46%)	2471 (20.03%)	0.0105
Comorbidities						
Essential Hypertension, N (%)	2627 (20.99%)	11460 (20.74%)	0.0063	2552 (20.69%)	2456 (19.91%)	0.0194
Type 2 Diabetes Mellitus, N (%)	1099 (8.78%)	4174 (7.55%)	0.0449	1055 (8.55%)	965 (7.82%)	0.0266
Rheumatoid Arthritis, N (%)	214 (1.71%)	468 (0.85%)	0.0769	188 (1.52%)	170 (1.38%)	0.0122
Psoriasis, N (%)	166 (1.33%)	488 (0.88%)	0.0424	151 (1.22%)	126 (1.02%)	0.0192
Alcohol abuse, N (%)	137 (1.10%)	660 (1.19%)	0.0094	135 (1.10%)	108 (0.88%)	0.0222
Systemic Lupus Erythematosus (SLE), N (%)	207 (1.65%)	198 (0.36%)	0.1301	138 (1.12%)	131 (1.06%)	0.0055
Nicotine dependence, N (%)	528 (4.22%)	2767 (5.01%)	0.0376	517 (4.19%)	472 (3.83%)	0.0186

Baseline demographic and clinical characteristics of patients with Ulcerative Colitis (UC) taking Thiopurines and patients with Ulcerative Colitis (UC) taking 5-Aminosalicylic Acid (5-ASA) and not taking thiopurines or biologics before and after propensity score matching (PSM). Continuous variables are presented as mean $\pm$ standard deviation; categorical variables are presented as *n* (%). Standardized mean differences quantify covariable imbalance with values > 0.1 indicating clinically meaningful differences. (Abbreviations: 5-ASA- 5-Aminosalicylic Acid, BMI- Body Mass Index, Kg- Kilogram, m- meter, PSM- Propensity Score Matching, SD-Standard Deviation, UC- Ulcerative Colitis)

Supplementary Table 4 Baseline Characteristics of patients with Crohn’s Disease (CD) taking Thiopurines and patients with Crohn’s Disease (CD) taking 5-Aminosalicylic Acid (5-ASA) and not taking thiopurines or biologics

Characteristics	Before PSM				After PSM			
	CD Thiopurines	with ASA	CD with 5- ASA	Standardized Mean Difference	CD Thiopurines	with ASA	CD with 5- ASA	Standardized Mean Difference
N total	21112		24907		18111		18111	
Age, Mean $\pm$ SD, years	40.7 $\pm$ 18.6		47.9 $\pm$ 20.6	0.3651	42.7 $\pm$ 18.4		42.5 $\pm$ 19.3	0.0089
Sex								
Male, N (%)	9228 (44.28%)		10975 (44.86%)	0.0115	8057 (44.49%)		8171 (45.12%)	0.0127
Female, N (%)	11582 (55.58%)		13463 (55.02%)	0.0112	10033 (55.40%)		9919 (54.77%)	0.0127

Race							
White, N (%)	16424 (78.82%)	18705 (76.45%)	0.0569	14141 (78.08%)	14149 (78.12%)	0.0011	
Black or African American, N (%)	2011 (9.65%)	2338 (9.56%)	0.0032	1736 (9.59%)	1694 (9.35%)	0.0079	
Asian, N (%)	329 (1.58%)	463 (1.89%)	0.0240	306 (1.69%)	318 (1.76%)	0.0051	
American Indian or Alaska Native, N (%)	88 (0.42%)	82 (0.34%)	0.0142	72 (0.40%)	62 (0.34%)	0.0091	
Native Hawaiian or Other Pacific Islander, N (%)	19 (0.09%)	41 (0.17%)	0.0213	17 (0.09%)	18 (0.10%)	0.0018	
Unknown race, N (%)	1539 (7.39%)	2204 (9.01%)	0.0592	1450 (8.01%)	1498 (8.27%)	0.0097	
Ethnicity							
Hispanic or Latino, N (%)	660 (3.17%)	954 (3.90%)	0.0396	610 (3.37%)	588 (3.25%)	0.0068	
Not Hispanic or Latino, N (%)	15943 (76.51%)	17983 (73.50%)	0.0696	13656 (75.40%)	13661 (75.43%)	0.0006	
Unknown Ethnicity, N (%)	4235 (20.32%)	5531 (22.61%)	0.0556	3845 (21.23%)	3862 (21.32%)	0.0023	
Comorbidities							

Essential Hypertension, N (%)	3194 (15.33%)	5347 (21.85%)	0.1683	2956 (16.32%)	2847 (15.72%)	0.0164
Type 2 Diabetes Mellitus, N (%)	1089 (5.23%)	1972 (8.06%)	0.1140	1038 (5.73%)	966 (5.33%)	0.0174
Rheumatoid Arthritis, N (%)	314 (1.51%)	312 (1.28%)	0.0198	247 (1.36%)	241 (1.33%)	0.0029
Psoriasis, N (%)	305 (1.46%)	221 (0.90%)	0.0518	195 (1.08%)	188 (1.04%)	0.0038
Alcohol abuse, N (%)	177 (0.85%)	310 (1.27%)	0.0408	163 (0.90%)	169 (0.93%)	0.0035
Systemic Lupus Erythematosus (SLE), N (%)	230 (1.10%)	146 (0.60%)	0.0552	135 (0.75%)	131 (0.72%)	0.0026
Nicotine dependence, N (%)	1693 (8.13%)	1903 (7.78%)	0.0128	1455 (8.03%)	1405 (7.76%)	0.0102
BMI, Mean $\pm$ SD, Kg/m ²	26.6 $\pm$ 7.22	27.5 $\pm$ 7.19	0.1267	27.0 $\pm$ 7.2	27.0 $\pm$ 7.2	0.0060
BMI=30-34.9 Kg/m ² , N (%)	3887 (18.65%)	4808 (19.65%)	0.0253	3396 (18.75%)	3286 (18.14%)	0.0157
BMI=35-39.9 Kg/m ² , N (%)	1879 (9.02%)	2380 (9.73%)	0.0244	1651 (9.12%)	1581 (8.73%)	0.0136
BMI $\geq$ 40 Kg/m ² , N (%)	916 (4.40%)	1109 (4.53%)	0.0066	788 (4.35%)	773 (4.27%)	0.0041

Baseline demographic and clinical characteristics of patients with Crohn's Disease (CD) taking Thiopurines and patients with Crohn's Disease (CD) taking 5-Aminosalicylic Acid (5-ASA) and not taking thiopurines or biologics before and after

propensity score matching (PSM). Continuous variables are presented as mean $\pm$ standard deviation; categorical variables are presented as *n* (%). Standardized mean differences quantify covariable imbalance with values > 0.1 indicating clinically meaningful differences. (Abbreviations: 5-ASA- 5-Aminosalicylic Acid, CD- Crohn's Disease, BMI- Body Mass Index, Kg- Kilogram, m- meter, PSM- Propensity Score Matching, SD-Standard Deviation)