Supplementary Table 1 Disease characteristics of the patients with Crohn's disease enrolled in the study

Paris Classification		At diagnosis n (%)	At worst flare n (%)
Age	A1a: 0-10 years	53 (24.8)	21 (9.8)
	A1b: 10-17 years	148 (69.2)	142 (66.4)
	A2: 10-40 years	12 (5.6)	21 (9.8)
Location	L1: Ileal	52 (24.3)	40 (18.7)
	L2: Colonic	39 (18.3)	27 (12.6)
	L3: Ileocolonic	98 (45.8)	93 (43.7)
	L4a: upper disease proximal to ligament of Treitz	22 (10.3)	18 (8.4)
	L4b: upper disease distal to ligament of Treitz	8 (3.7)	9 (4.2)
Behaviour	B1: nonstricturing	148 (69.5)	116 (54.5)
	B2: structuring	15 (7.0)	19 (8.9)
	B3: penetrating	19 (8.9)	21 (9.8)
	B2B3: penetrating and stricturing	4 (1.9)	5 (2.3)
	P: perianal disease modifier	20 (9.3)	20 (9.3)
Growth	G0: no evidence of growth delay	147 (69.0)	124 (58.2)
	G1: growth delay	33 (15.4)	34 (15.9)

Supplementary Table 2 Disease characteristics of the patients with ulcerative colitis enrolled in the study

Paris Classification		At diagnosis n (%)	At worst flare n (%)
Extent	E1: Proctitis	19 (9.9)	9 (4.7)
	E2: Left-sided colitis	33 (17.2)	28 (14.6)
	E3: Extensive colitis	30 (15.6)	24 (12.5)
	E4: Pancolitis	90 (46.9)	82 (42.7)
Severity	S0: never severe	116 (60.4)	89 (46.4)
	S1: ever severe	40 (20.8)	52 (27.1)

Supplementary Table 3 Genotype distribution in the Polish population according to previous studies

	Study group (n)	ε2ε2	ε2ε3	ε3ε3	ε3ε4	ε4ε4	ε2ε4
The current study	IBD (406)	3	53	253	88	4	5
Kowalska et al.[41]	Healthy subjects (137)	0	11	100	19	3	4
Bednarska-Makaruk et al.[42]	Healthy subjects (170)	2	18	115	30	1	4
Jasieńska et al.[40]	Healthy women (118)	0	10	89	15	3	1
Bojar et al.[43]	Postmenopausal women (402)	nd	63	253	*		

only data for APOEε4 allele were available: 86

Supplementary Table 4 Clinical characteristics in patients with inflammatory bowel diseases depending on major *APOE* genotypes

Variables	n	*ε2/ε3*	*ε3/ε3*	*ε3/ε4*	p value

Median (IQR) or n (%)					
Age [y]					
at inclusion	397	15.6 (13.2-16.8)	15.2 (13.1-17.1)	14.5 (12.4-16.3)	0.2364
at diagnosis	404	11.7 (9.3-14.6)	12.7 (8.9-14.8)	12.5 (9.2-14.3)	0.8182
at worst flare	355	13.6 (11.5-15.9)	13.6 (10.8-15.9)	13.9 (10.7-15.8)	0.9921
Duration of the disease [y]	390	2.8 (0.9-5.4)	2.0 (0.6-3.9)	1.7 (0.4-4.1)	0.1880
Nutritional status					
Weight at diagnosis [kg]	387	38.3 (28.2-49.5)	38.0 (25.5-52.9)	43.3 (28.4-54.3)	0.5602
Weight at diagnosis [z score]	383	-0.43 ([-1.01]-0.28)	-0.73 ([-1.37]-0.00)	-0.56 ([-1.23]-0.41)	0.0791
Height at diagnosis [cm]	382	148.3 (138.3-167.0)	152.0 (134.0-166.0)	152.5 (138.5-169.3)	0.8071
Height at diagnosis [z score]	378	-0.15 ([-0.82]-0.61)	-0.28 ([-1.15]-0.53)	0.12 ([-0.84]-1.00)	0.0622
Body mass index at diagnosis [kg/m²]	382	17.24 (15.65-18.87)	16.82 (14.80-18.96)	17.18 (15.17-20.52)	0.5072
Body mass index at diagnosis [z score]	378	-0.30 ([-1.18]-0.11)	-0.67 ([-1.28]-[-0.03])	-0.59 ([-1.19]-0.51)	0.4389
Weight at worst flare [kg]	345	43.3 (34.0-53.0)	43.0 (30.5-54.5)	48.5 (34.5-59.5)	0.3583

Parameter	N				p-value
Weight at worst flare [z score]	339	-0.55 ([-1.06]-0.23)	-0.81 ([-1.40]-[-0.05])	-0.55 ([-1.04]-0.35)	0.0804
Height at worst flare [cm]	345	153.3 (146.5-168.0)	158.0 (141.0-168.8)	160.0 (144.5-172.0)	0.6273
Height at worst flare [z score]	340	0.01 ([-0.86]-0.75)	-0.36 ([-1.13]-0.49)	-0.17 ([-0.91]-0.81)	0.1872
Body mass index at worst flare [kg/m^2]	341	17.64 (15.86-19.45)	17.10 (15.24-19.53)	17.87 (15.79-21.29)	0.2641
Body mass index at worst flare [z score]	337	-0.66 ([-1.16]-0.07)	-0.80 ([-1.36]-[-0.11])	-0.48 ([-1.22]-0.54)	0.2514
Albumin level					
at diagnosis [g/dl]	345	4.1 (3.8-4.4)	4.0 (3.5-4.3)	4.0 (3.6-4.4)	0.2637
at worst flare [g/dl]	327	4.0 (3.8-4.5)	3.9 (3.4-4.3)	4.1 (3.8-4.4)	**0.0335**
Parameter of inflammation					
CRP at diagnosis [mg/l]	386	4.0 (0.8-22.8)	6.6 (1.2-20.9)	3.9 (0.5-18.3)	0.2490
CRP at worst flare [mg/l]	347	4.7 (1.4-28.8)	7.7 (1.9-31.3)	3.0 (0.5-17.2)	**0.0165**
Treatment					
Systemic steroids[1]	406	30 (56.6)	165 (65.2)	50 (56.8)	0.2504
Number of courses of steroid treatment	402	1 (0-2)	1 (1-2)	1 (0-2)	0.1175
Immunosuppressive treatment[2]	405	34 (64.2)	184 (73.0)	56 (63.6)	0.1638

	N				
Number of immunosuppressants	405	1 (0-1)	1 (0-1)	1 (0-1)	0.0976
Time-to-first dose of immunosuppressive treatment [months]	275	2.7 (0.0-17.0)	2.5 (0.0-9.1)	1.9 (0.0-9.6)	0.5567
Age at first intake of immunosuppressive treatment [years]	275	13.0 (10.3-14.9)	12.9 (9.4-14.6)	12.0 (9.2-15.5)	0.6775
Biological therapy[3]	406	19 (35.8)	102 (40.3)	31 (35.2)	0.6357
Total number of biologics	406	0 (0-1)	0 (0-1)	0 (0-1)	0.5136
Time-to-first dose of biological treatment [months]	150	17.8 (10.0-44.0)	13.9 (7.0-26.8)	12.2 (4.7-26.9)	0.4062
Age at first biological treatment	151	13.9 (13.5-15.7)	13.1 (10.7-15.1)	13.4 (10.1-15.6)	0.3549
Operative treatment[4]	406	2 (3.8)	22 (8.7)	9 (10.2)	0.3888
Age at first surgery [years]	36	9.5 (7.7-11.4)	14.5 (11.7-16.7)	14.9 (14.0-15.6)	**0.0378**
Time-to-first surgery [months]	30	12.0	16.7 (3.0-38.6)	25.1 (7.5-40.5)	0.8254

Hospitalizations (if duration ≥1 years)					
Hospitalizations for relapse (per 1 year of the disease)	231	0.35 (0.19-0.69)	0.57 (0.28-0.93)	0.61 (0.25-1.28)	0.1594
Days of hospitalization for relapse (per 1 year of the disease)	230	2.46 (0.57-5.11)	4.74 (1.63-8.34)	6.03 (1.66-8.68)	0.0745
Relapses from diagnosis (per 1 year of the disease)	230	0.37 (0.16-0.87)	0.57 (0.28-0.99)	0.60 (0.23-1.33)	0.3548
Severe relapses from diagnosis (per 1 year of the disease)	229	0.00 (0.00-0.29)	0.17 (0.00-0.53)	0.25 (0.00-0.47)	0.1762
Concomitant diseases[5]	406	25 (47.2)	81 (32.0)	23 (6.1)	**0.0331**
Extraintestinal manifestations	406	10 (18.9)	57 (22.5)	21 (23.9)	0.7822

[1] Systemic steroid therapy included: methylprednisolone, prednisone, hydrocortisone.

[2] Immunosuppressive and anti-inflammatory agents included: azathioprine, methotrexate, mercaptopurine, cyclosporine, mycophenolate mofetil, tacrolimus, sulfasalazine.

[3] Biological agents included: infliximab, adalimumab, golimumab, vedolizumab.

[4] Only surgery related to IBD-specific problems (e. g. colectomy, resection, fistula, perforation, abscess) was included.

[5] e.g. celiac disease, bronchial asthma, obesity, gastroesophageal reflux disease, epilepsy, hypothyroidism.