

SUPPLEMENTARY MATERIAL

GLP-1 based therapies and disease course of inflammatory bowel disease

Detailed description of the algorithm used to define type 2 diabetes

Type 2 diabetes (T2D) was defined as a registration with ICD-8 code 250 or ICD-10 code E11 in the Danish National Patient Registry and/or two or more purchases of glucose-lowering drugs with ATC-code A10B. Patients with more registrations with type 1 diabetes (T1D) than with T2D or with the last known registration with T1D was excluded to avoid T1D misclassified as T2D. We also excluded females who had a registration with polycystic ovarian syndrome (PCOS) (ICD-10-code E282) and females who only purchased metformin (ACT-code A10BA02) and clomifen (ACT-code G03GB02) or antiandrogens in combination with oestrogens (ATC-code G03HB) because these are more likely in treatment for PCOS than T2D.

Supplementary table 1. Codes used to record inflammatory bowel disease and disease severity and course of inflammatory bowel disease

Variable	The Danish National Patient Register, ICD-8 codes	The Danish National Patient Register, ICD-10 codes	The Danish National Patient Register, Procedure codes	The Register of Medicinal Product Statistic, ATC codes
Crohn's disease*	5630	DK50		
Ulcerative colitis*	56319, 56904	DK51		
IBD-related medications				
5-ASA				A07EC
Oral corticosteroids				H02AB
Topical corticosteroids				A07EA01, A07EA02, A07EA06
Immunomodulators				L01BB02, L04AX01, L04AX03
Other Immune suppressants			BOHJ19H4, BOHJ28D, BOHJ18B	L04AA06, L04AA29, L04AA33, L04AC05, L04AX02, L04AD01
TNF- α -inhibitors			BOHJ18A1, BOHJ18A3, BOHJ18A4	L04AB04
IBD-related inpatient hospitalizations		DK50, DK51, DK56, DK60, DK61		
IBD-related major surgery			KJE, KJF, KJG, KJH**	
IBD-related minor surgery			KJHA00, KJHD20, KJHD23, KJHD30, KJHD33, KJHD60, KJAJ00, KKCH30, KKDH50, KJFA38, KJFA58, KJFA76, KJFA86, KJGA58, KJHD00, KTJA40	

ATC, Anatomical Therapeutic Classification; ICD, International Classification of Disease.

* Patients with recordings for both UC and CD were classified with the second recording.

** All codes and subcodes, except those defining minor surgery.

Detailed description of the IBD severity score

We counted the number of oral corticosteroid redemptions (0, 1–2, >2), IBD-related inpatient hospitalisations (0, 1–2, >2), IBD-related major surgery (yes, no), and IBD-related minor surgery (0, 1–2, >2). Those were combined into a baseline severity score divided in mild (highest score=0 and no major surgery), moderate (highest score=1-2 and no major surgery), or severe disease (highest score >2 or major surgery).¹⁷ This disease severity score has previously been used in a Danish nationwide cohort of IBD patients.¹⁷

Supplementary table 2. Codes used to record treatment with antidiabetic therapy

Variable	Anatomical Therapeutic Classification (ATC) codes
GLP-1 receptor agonists	A10BJ01, A10BJ02, A10BJ03, A10BJ05, A10BJ06, A10AE54, A10AE56
DPP-4 inhibitors	A10BH01, A10BH02, A10BH03, A10BH04, A10BH05, A10BD07, A10BD08, A10BD09, A10BD10, A10BD11, A10BD13, A10BD19, A10BD21, A10BD24
Biguanides	A10BA02
Insulin and analogs	A10AB01, A10AB04, A10AB05, A10AB06, A10AC01, A10AD01, A10AD04, A10AD05, A10AD06, A10AE01, A10AE04, A10AE05, A10AE06
Sulfonylureas	A10BB01, A10BB03, A10BB07, A10BB09, A10BB12
Thiazolidinediones	A10BG02, A10BG03
SGLT2 inhibitors	A10BK01, A10BK02, A10BK03, A10BK04
Combination therapy	A10BD03, A10BD04, A10BD15, A10BD16, A10BD20, A10BD23
Others	A10BF01, A10BX02, A10BX03

Supplementary table 3. Codes used to record comorbidities related to type 2 diabetes

Variable	International Classification of Disease codes, 10th revision, and Anatomical Therapeutic Classification (ATC) codes
Diabetic nephropathy	DE112, DE142, DN083
Diabetic retinopathy	DE113, DE143, DH280, DH360, DH334B
Diabetic neuropathy	DE114, DE144, DG590, DG632, DG990
Myocardial infarction	DI21, DI23
Heart failure	DI50, DI110, DI130, DI132
Cerebrovascular disease	DI60-DI69, DG45, DG46
Other diabetic complications	DE115, DE116, DE117, DE118
Lipid-lowering drugs	C10
Antihypertensive drugs	C02, C03, C07, C08, C09