

Supplementary appendix

Prevalence and risk factors for diabetic retinopathy at diagnosis of type 2 diabetes: an observational cohort study of 77681 patients from the Swedish National Diabetes Registry

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ICD codes

Coronary heart disease	I20, I21, I22, I23, I24, I25
Stroke	I61, I62, I63, I64
Atrial fibrillation	I48
Heart failure	I50
Peripheral arterial disease	I702
CABG	FNA0, FNA00, FNA10, FNA20, FNA96, FNB00, FNB20, FNB96, FNC10, FNC20, FNC30, FNC40, FNC50, FNC60, FNC96, FND10, FND20, FND96, FNE00, FNE10, FNE20, FNE96, FNF00, FNF10, FNF20, FNF30, FNF96
Chronic Kidney Disease (CKD)	N181, N182, N183, N184, N189, N199

ATC-codes

Acetylsalicylic acid	B01AC06, N02BA01, N02BA51
Lipid lowering drug	C10
Type of hypertensive treatment	C02, C03, C07, C08, C09
ACEi - Angiotensin converting enzyme inhibitor	C09A, C09B
ARB - Angiotensin receptor blocker	C09C, C09D
Alpha blocker	C02CA
Beta blocker	C07
Calcium channel antagonist / blocker	C08C
Diuretics	C03A, C03B, C03C, C03D, C03E

Table S1. Summary of missing data in main cohort and excluded patients

	Main cohort n=77 681		Excluded n=61 207		Total N = 138 888	
	N	%	N	%	N	%
Smoking	17959	23.12	15778	25.78	33737	24.29
BMI	19517	25.12	16701	27.29	36218	26.08
HbA1c at inclusion	4321	5.56	3939	6.44	8260	5.95
Systolic blood pressure	7413	9.54	8058	13.17	15471	11.14
Diastolic blood pressure	7472	9.62	8127	13.28	15599	11.23

Table S2. Patient characteristics for sub-cohort participants

Characteristics	Categories	Sub-cohort 1 N=73350	Sub-cohort 2 N=56764	Sub-cohort 3 N=52697	p-value	SMD
Age years, mean (SD)		62.62 (12.39)	62.65 (12.28)	62.66 (12.25)	0.810	0.002
Age category, n(%)	<55 years	18437 (25.1)	14118 (24.9)	13019 (24.7)	0.433	0.009
	55-64 years	19505 (26.6)	15225 (26.8)	14202 (27.0)		
	65-74 years	23254 (31.7)	18100 (31.9)	16865 (32.0)		
	75+year	12154 (16.6)	9321 (16.4)	8611 (16.3)		
Sex female, n(%)		30139 (41.1)	23162 (40.8)	21618 (41.0)	0.569	0.004
Smoking, n(%)	Smoking	-	-	7938 (15.1)	-	-
HbA1c (mmol/mol) at inclusion, mean (SD)		58.07 (20.93)	57.57 (20.64)	57.61 (20.71)	<0.001	0.016
HbA1c (mmol/mol) at inclusion, n(%)	<48	26403 (36.0)	21058 (37.1)	19570 (37.1)	<0.001	0.020
	48-52	15715 (21.4)	12255 (21.6)	11381 (21.6)		
	53-57	7809 (10.6)	5957 (10.5)	5508 (10.5)		
	58-70	9165 (12.5)	6862 (12.1)	6317 (12.0)		
	>70	14258 (19.4)	10632 (18.7)	9921 (18.8)		
Place of birth, n(%)	Sweden	56013 (76.4)	43322 (76.3)	40099 (76.1)	<0.001	0.007
	Europe except Sweden	8490 (11.6)	6625 (11.7)	6206 (11.8)		
	North America	184 (0.3)	144 (0.3)	134 (0.3)		
	South America	625 (0.9)	506 (0.9)	474 (0.9)		
	Asia	6175 (8.4)	4730 (8.3)	4439 (8.4)		
	Africa	1851 (2.5)	1428 (2.5)	1338 (2.5)		
	Oceania	12 (0.0)	9 (0.0)	7 (0.0)		
Lipid lowering therapy, n(%)		27495 (37.5)	21510 (37.9)	19901 (37.8)	0.826	0.006
Stroke, n(%)		2737 (3.7)	2057 (3.6)	1900 (3.6)	<0.001	0.004
Coronary heart disease, n(%)		8719 (11.9)	6804 (12.0)	6273 (11.9)	0.006	0.002
Atrial fibrillation, n(%)		5847 (8.0)	4493 (7.9)	4159 (7.9)	0.287	0.002
Heart failure, n(%)		3343 (4.6)	2561 (4.5)	2329 (4.4)	0.111	0.004
Peripheral arterial disease, n(%)		644 (0.9)	484 (0.9)	452 (0.9)	0.005	0.002

Characteristics	Categories	Sub-cohort 1	Sub-cohort 2	Sub-cohort 3	p-value	SMD
Coronary artery bypass graft, n(%)		929 (1.3)	772 (1.4)	721 (1.4)	0.027	0.006
Chronic Kidney Disease, n(%)		660 (0.9)	520 (0.9)	469 (0.9)	0.001	0.002
Any hypertensive treatment, n(%)		47369 (64.6)	37191 (65.5)	34494 (65.5)	<0.001	0.013
Acetylsalicylic acid, n(%)		13621 (18.6)	10616 (18.7)	9815 (18.6)	0.832	0.002
Angiotensin converting enzyme inhibitor, n(%)		17887 (24.4)	14202 (25.0)	13158 (25.0)	0.012	0.010
Angiotensin receptor blocker, n(%)		18850 (25.7)	14819 (26.1)	13726 (26.0)	0.189	0.006
Alpha blocker, n(%)		549 (0.7)	443 (0.8)	413 (0.8)	0.722	0.003
Beta blocker, n(%)		24417 (33.3)	19025 (33.5)	17598 (33.4)	0.689	0.003
Calcium channel antagonist / blocker, n(%)		18820 (25.7)	14894 (26.2)	13860 (26.3)	0.014	0.010
Diuretics, n(%)		14776 (20.1)	11588 (20.4)	10739 (20.4)	0.416	0.004
Education category, n(%)	9 years	34896 (47.6)	27014 (47.6)	25062 (47.6)	0.985	0.004
	10-12 years	20825 (28.4)	16114 (28.4)	14985 (28.4)		
	College/university	16678 (22.7)	12927 (22.8)	11997 (22.8)		
Systolic blood pressure (mmHg), mean (SD)		-	137.5 (17.3)	135.6 (16.20)	0.963	0.001
Systolic blood pressure (mmHg), n(%)	<110	-	1481 (2.6)	1380 (2.6)	0.995	0.003
	110– < 120	-	4632 (8.2)	4304 (8.2)		
	120– < 130	-	11588 (20.4)	10809 (20.5)		
	130– < 140	-	15626 (27.5)	14471 (27.5)		
	=> 140	-	23437 (41.3)	21733 (41.2)		
Diastolic blood pressure (mmHg), mean (SD)		-	81.2 (10.63)	80.6 (10.2)	0.959	<0.001
Diastolic blood pressure (mmHg), n(%)	< 60	-	509 (0.9)	472 (0.9)	1.000	0.001
	60– < 70	-	4763 (8.4)	4429 (8.4)		
	70– < 80	-	15353 (27.0)	14277 (27.1)		
	80– < 85	-	16607 (29.3)	15403 (29.2)		
	=> 85	-	19532 (34.4)	18116 (34.4)		
BMI (kg/m ²), mean (SD)		-	30.9 (5.9)	31.4 (5.9)	0.690	0.002
BMI (kg/m ²), n(%)	<18.5	-	152 (0.3)	141 (0.3)	0.998	0.002

Characteristics	Categories	Sub-cohort 1	Sub-cohort 2	Sub-cohort 3	p-value	SMD
	18.5-<25	-	6237 (11.0)	5805 (11.0)		
	25- < 30	-	19883 (35.0)	18466 (35.0)		
	30- < 35	-	17622 (31.0)	16381 (31.1)		
	=> 35	-	152 (0.3)	141 (0.3)		

SD: Standard deviation (SD). SMD: Standardized mean difference. P-values are obtained from t-test for continuous variables and Chi²-tests for frequencies.