

SUPPLEMENTARY DATA

Table S1

ICD10 codes defining diseases

Disease	Corresponding International Classification of Diseases, 10th revision codes
Cardiovascular diseases	
Myocardial infarction	I21;I22;I23
Congestive heart failure	I50; I11.0; I13.0; I13.2
Peripheral vascular disease	I70; I71; I72; I73; I74; I77
Cerebrovascular disease	I60-I69; G45; G46; G81; G82
Mitral and/or aortic disease	I05-I06; I08; I34; I35
Pulmonary heart disease	I27
Thromboembolic disease	I26; I269; I801; I802; I803
Hypertension	I10-I15
Dementia	F00-F03; F051; G30
Pulmonary diseases	
Pneumonia	J12-J18; A481; A709
COPD	J40-J44 excluding J448B
Asthma	J448B; J45
Non-IPF-IIP	J841 excluding J841A
Bronchiectases	J47
Dyspnea	R060
Cough	R05
Other diseases	
Connective tissue disease	M05; M06; M08; M09;M30;M31; M32; M33; M34; M35; M36; D86
Ulcer disease	K221; K25-K28
Liver disease	B18; K700-K703; K709; K71; K73; K74; K760; B150; B160; B162; B190; K704; K72; K76.6; I85
Diabetes mellitus	E10-E12
Moderate/severe renal disease	I12; I13; N00-N05; N07; N11; N14; N17-N19; Q61
Any cancer excluding non-melanoma skin cancer and lung cancer	C00-C98
Lung cancer	C34
Osteoporosis	M80-M82
Thyroid disorders	E00; E03; E05; E01; E02; E04; E06; E07

ICD10 = Corresponding International Classification of Diseases, 10th revision codes

Table S2

Proportion of pre-specified categories among patients diagnosed with idiopathic pulmonary fibrosis and sex- and age-matched population controls stratified on year 2002-2010.

Disease entity	IPF-cases		Controls	
	N (%)	First occurrence relative to IPF diagnosis, months, median (IQR)	N	First occurrence relative to index date, months, median (IQR)
Pneumonia	14 (2.2)	1.8 (0.7-4.5)	n < 10	n < 10

IPF = idiopathic pulmonary fibrosis

IQR = inter quartile range

Table s3

Proportion of ten pre-specified categories among patients diagnosed with idiopathic pulmonary fibrosis and sex- and age-matched population controls stratified on year 2011-2017.

Disease entity	IPF-cases		Controls	
	N (%)	First occurrence relative to IPF diagnosis, months, median (IQR)	N (%)	First occurrence relative to index date, months, median (IQR)
Dyspnea	85 (13.1)	2.2 (0.9-3.8)	26.0 (0.4)	3.6 (2.5-4.4)
Non-IPF IIP	81 (12.5)	2.8 (1.1-4.3)	n<10	n<10
Pneumonia	42 (6.5)	2.0 (0.9-3.6)	40.0 (0.6)	2.9 (1.3-4.1)
COPD	19 (2.9)	1.7 (0.9-2.6)	28.0 (0.4)	2.7 (1.7-4.1)
Cough	16 (2.5)	3.0 (2.3-4.3)	n<10	n<10
Osteoporosis	13 (2.0)	2.5 (1.6-4.3)	21.0 (0.3)	2.5 (1.6-4.5)
Pulm. hypertension	12 (1.8)	2.2 (1.1-4.5)	n<10	n<10
Heart failure	12 (1.8)	3.4 (0.5-5.1)	26.0 (0.4)	2.7 (1.0-3.6)

COPD = chronic obstructive pulmonary disease

IIP = idiopathic interstitial pneumonias

IPF = idiopathic pulmonary fibrosis

IQR = inter quartile range

Table S4

Dominating diagnoses among patients with a diagnosis of idiopathic pulmonary fibrosis (IPF) established within 3 years prior to the IPF diagnosis, and randomly assigned index date among controls during 2002-2010.

Diagnosis	ICD-10	IPF-cases		Controls	
		N (%)	First occurrence relative to IPF diagnosis, months, median (IQR)	N (%)	First occurrence relative to index date, months, median (IQR)
Other interstitial pulmonary diseases	J84	31 (4.8)	2.2 (0.9-3.5)	n<10	n<10
Pneumonia (organism unspecified)	J18	14 (2.2)	2.7 (1.4-4.9)	n<10	n<10
Other chronic obstructive pulmonary disease	J44	12 (1.8)	2.5 (0.8-3.3)	n<10	n<10
Respiratory failure (not elsewhere classified)	J96	11 (1.7)	1.6 (0.9-4.6)	n<10	n<10

ICD10 = Corresponding International Classification of Diseases, 10th revision codes

IPF = idiopathic pulmonary fibrosis

IQR = inter quartile range

Table S5

Dominating diagnoses among patients with a diagnosis of idiopathic pulmonary fibrosis (IPF) established within 3 years prior to the IPF diagnosis, and randomly assigned index date among controls during 2011-2017.

Diagnosis	ICD-10	IPF-cases		Controls	
		N (%)	First occurrence relative to IPF diagnosis, months, median (IQR)	N	First occurrence relative to index date, months, median (IQR)
Other interstitial pulmonary diseases	J84	267 (41.1)	2.4 (1.0-4.0)	n<10	n<10
Abnormalities of breathing	R06	87 (13.4)	2.2 (0.8-3.8)	29 (0.4)	3.6 (2.3-4.4)
Respiratory failure, not elsewhere classified	J96	47 (7.2)	2.4 (0.9-4.5)	17 (0.3)	3.7 (1.9-4.3)
Pneumonia, organism unspecified	J18	37 (5.7)	2.0 (0.9-4.0)	29 (0.4)	3.1 (1.9-4.8)
Abnormal findings on diagnostic imaging of lung	R91	35 (5.4)	2.3 (1.1-4.6)	n<10	n<10
Atrial fibrillation and flutter	I48	33 (5.1)	2.1 (1.7-3.8)	55 (0.8)	3.1 (1.9-4.8)
Other chronic obstructive pulmonary disease	J44	21 (3.2)	1.1 (0.5-2.8)	42 (0.6)	3.1 (1.7-4.3)
Cough	R05	17 (2.6)	3.1 (2.6-4.0)	n<10	n<10
Bacterial pneumonia, not elsewhere classified	J15	17 (2.6)	3.1 (2.0-4.9)	21 (0.3)	2.8 (1.2-3.4)
Heart failure	I50	15 (2.3)	1.8 (0.6-4.7)	33 (0.5)	2.8 (1.2-4.2)
Angina pectoris	I20	15 (2.3)	2.8 (2.3-4.7)	19 (0.3)	3.1 (2.0-4.7)
Chronic ischaemic heart disease	I25	15 (2.3)	2.3 (0.5-4.4)	40 (0.6)	3.1 (1.6-4.2)
Essential (primary) hypertension	I10	14 (2.2)	2.9 (0.6-4.0)	65 (1.0)	3.2 (2.0-4.3)
Nonrheumatic aortic valve disorders	I35	13 (2.0)	2.5 (2.1-3.0)	24 (0.4)	3.3 (2.2-4.2)
Other pulmonary heart diseases	I27	13 (2.0)	1.9 (1.2-4.2)	n<10	n<10
Senile cataract	H25	13 (2.0)	3.9 (2.4-4.2)	57 (0.9)	2.9 (1.3-4.4)
Osteoporosis without pathological fracture	M81	12 (1.8)	2.8 (1.4-4.2)	17 (0.3)	2.5 (2.1-3.8)
Malaise and fatigue	R53	12 (1.8)	2.3 (0.6-3.4)	22 (0.3)	2.2 (1.1-3.2)
Other respiratory disorders	J98	11 (1.7)	1.7 (0.5-3.6)	n<10	n<10
Non-insulin-dependent diabetes mellitus	E11	10 (1.5)	3.0 (1.7-4.3)	40 (0.6)	3.5 (1.9-4.6)

ICD10 = Corresponding International Classification of Diseases, 10th revision codes

IPF = idiopathic pulmonary fibrosis

IQR = inter quartile range

Table S6

Dynamics of dominating drug classes used by newly diagnosed patients with idiopathic pulmonary fibrosis and their matched controls during 2002-2010.

Drug class, name	ATC	IPF-cases			Controls		
		New users before IPF, n (%)	Ongoing users before IPF, n (%)	Discontinued after IPF, n (%)	New users before index date, n (%)	Ongoing users before index date, n (%)	Discontinued after index date, n (%)
Potassium	A12BA	12 (11.4)	20 (19.0)	n < 10	n < 10	57 (5.4)	n < 10
Glucocorticoids (systemic)	H02AB	12 (11.4)	42 (40.0)	n < 10	10 (1.0)	38 (3.6)	17 (44.7)
Loop diuretics	C03CA	11 (10.5)	25 (23.8)	n < 10	n < 10	58 (5.5)	n < 10

ATC = Anatomical Therapeutic Chemical classification

Table S7

Dynamics of dominating drug classes used by newly diagnosed patients with idiopathic pulmonary fibrosis and their matched controls during 2011-2017.

Drug class, name	ATC	IPF-cases			Controls		
		New users before IPF [†] , n (%)	Ongoing users before IPF [†] , n (%)	Discontinued after IPF [‡] , n (%)	New users before index date*, n (%)	Ongoing users before index date [†] , n (%)	Discontinued after index date [‡] , n (%)
Combinations of penicillin, incl. beta-lactamase inhibitors	J01CR	55 (10.1)	117 (21.5)	32 (38.1)	71 (1.3)	152 (2.8)	91 (63.6)
Glucocorticoids	H02AB	44 (8.1)	181 (33.2)	32 (24.6)	40 (0.7)	239 (4.4)	69 (30.8)
Mucolytics	R05CB	34 (6.2)	80 (14.7)	12 (19.0)	14 (0.3)	30 (0.6)	13 (44.8)
Proton pump inhibitors	A02BC	31 (5.7)	216 (39.6)	16 (9.2)	90 (1.7)	922 (16.9)	124 (13.8)
Selective beta-2-adrenoreceptor agonists	R03AC	28 (5.1)	96 (17.6)	25 (32.9)	34 (0.6)	299 (5.5)	67 (22.9)
Sulfonamides, plain	C03CA	20 (3.7)	127 (23.3)	20 (20.6)	51 (0.9)	486 (8.9)	41 (8.8)
Anilides	N02BE	19 (3.5)	178 (32.7)	19 (13.8)	140 (2.6)	1164 (21.4)	208 (18.5)
Fluoroquinolones	J01MA	18 (3.3)	39 (7.2)	14 (58.3)	43 (0.8)	85 (1.6)	64 (78.0)
Macrolides	J01FA	18 (3.3)	94 (17.2)	44 (62.0)	28 (0.5)	171 (3.1)	117 (71.3)
Natural opium alkaloids	N02AA	17 (3.1)	44 (8.1)	n<10	54 (1.0)	172 (3.2)	49 (30.1)
Potassium	A12BA	16 (2.9)	103 (18.9)	14 (18.7)	64 (1.2)	449 (8.2)	47 (11.0)
Adrenergics in combination with corticosteroids or other drugs, excl. anticholinergics	R03AK	16 (2.9)	71 (13.0)	22 (37.9)	16 (0.3)	269 (4.9)	19 (7.3)
Anticholinergics	R03BB	15 (2.8)	61 (11.2)	14 (31.1)	21 (0.4)	209 (3.8)	19 (9.5)
Opium alkaloids and derivatives	R05DA	15 (2.8)	44 (8.1)	18 (51.4)	26 (0.5)	122 (2.2)	52 (43.7)
Osmotically acting laxatives	A06AD	14 (2.6)	19 (3.5)	n<10	39 (0.7)	132 (2.4)	36 (32.1)
Bisphosphonates	M05BA	14 (2.6)	73 (13.4)	n<10	15 (0.3)	215 (3.9)	15 (7.0)
Adrenergics in combination with anticholinergics	R03AL	13 (2.4)	26 (4.8)	n<10	21 (0.4)	59 (1.1)	13 (26.0)
Other immunosuppressants	L04AX	13 (2.4)	49 (9.0)	19 (55.9)	n<10	56 (1.0)	n<10
Penicillins with extended spectrum	J01CA	12 (2.2)	56 (10.3)	20 (50.0)	43 (0.8)	318 (5.8)	163 (54.0)
Other opioids	N02AX	12 (2.2)	63 (11.6)	18 (36.0)	57 (1.0)	368 (6.8)	131 (36.9)
Selective serotonin reuptake inhibitors	N06AB	12 (2.2)	45 8.3)	n<10	19 (0.3)	323 (5.9)	35 (11.3)
Corticosteroids and antiinfectives in combination	S01CA	10 (1.8)	13 2.4)	n<10	61 (1.1)	116 (2.1)	89 (76.7)
Contact laxatives	A06AB	10 (1.8)	11 2.0)	n<10	36 (0.7)	74 (1.4)	25 (38.5)
HMG CoA reductase inhibitors	C10AA	10 (1.8)	210 38.5)	12 (7.3)	55 (1.0)	1802 (33.1)	80 (4.5)
Platelet aggregation inhibitors excl. heparin	B01AC	10 (1.8)	196 36.0)	13 (8.7)	48 (0.9)	1505 (27.6)	76 (5.2)

*) New use is defined as first-ever occurrence of the drug class within six months before the index date / diagnosis date

†) Ongoing use is defined as any occurrence of the drug class within the six months before the index date / diagnosis date

‡) Discontinuation is defined by the absence of any prescriptions on the drug class after the index date / diagnosis date compared to ongoing use

ATC = Anatomical Therapeutic Chemical classification