

Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10) Codes for Covariates*

Disease	ICD-10 in-hospital* and medical procedures	ICD-10 LTD*	Medications (ATC Codes)*
Associated inflammatory diseases			
IBD **	K50, K51, M074, M075	K50, K51	.
Uveitis	H20	.	.
Charlson comorbidity index			
Diabetes	E100, E101, E106, E108, E109, E110, E111, E116, E118, E119, E120, E121, E126, E128-E131, E136, E138-E141, E146, E148, E149		Reimbursement on at least 3 occasions: - insulins: codes A10AB01 to A10AB06, A10AC01 to A10AC04, A10AD01 to A10AD05, A10AE01 to A10AE05, A10AE30 and A10AE56 - oral antidiabetic drugs: A10BA02, A10BB01 to A10BB12, A10BD02 to A10BD10, A10BF01 and A10BF02, A10BG02 A10BG03, A10BH01 to A10BH03, A10BX01 to A10BX03 and A10BX05, A10BX06 and A10BX08
Diabetes with end-organ damage♦	E102-E105, E107, E112-E115, E117, E122-E125, E127, E132-E135, E137, E142-E145, E147		.
Myocardial infarction	I21, I22, I252, I255		.
Congestive heart failure	I110, I130, I132, I50		.
Peripheral vascular disease	I70, I71, I731, I738, I739, I771, I790, I792, K551, K558, K559, Z958, Z959 EDAF003, EDAF006, EDLF004, EDLF007, EDPF006, EEAFF002, EEAFF004, EEAFF006, EELF002, EEPF001		.
Hemiplegia	G041, G114, G801, G802, G81, G82, G830, G831-G834, G839		.
Cerebrovascular disease	G45, G46, H340, I60-I69		.
Dementia	F00-F03, F051, G30, G311		Reimbursement on at least 3 occasions: N06DA, N06DX01
Connective tissue disease	M05, M06, M315, M32, M33, M34, M351, M353, M360		.
Chronic pulmonary disease	I278, I279, J40-J47, J60, J67, J684, J701, J703		Reimbursement on at least 2 occasions: - inhaled beta-2-agonists: R03AB03, R03AC02 to R03AC04, R03AC08, R03AC12 and R03AC13 codes, R03AC18 and R03AC19, R03AK06 to

Disease	ICD-10 in-hospital* and medical procedures	ICD-10 LTD*	Medications (ATC Codes)*
			R03AK08, R03AK10 and R03AK11, R03AL01 to R03AL04 - inhaled corticosteroids: R03BA01 to R03BA03 and R03BA05, R03BA07, R03BA08 - inhaled anticholinergics: R03BB01, R03BB02, R03BB04, R03BB06, R03BB07 - others inhaled drugs: R03BC01, R03BC03 - systemic therapies: R03CC02, R03CC03, R03CC12, R03DA04, R03DA05, R03DA08, R03DC03, R03DX05
Ulcer disease	K25-K28		.
Mild liver disease	B18, K700-K703, K709, K713, K715, K717, K73, K74, K760, K762-K764, K768, K769, Z944		.
Moderate or severe liver disease	I850, I859, I864, I982, K704, K711, K721, K729, K765-K767		.
Moderate or severe renal disease	I120, I131, N032-N037, N052-N057, N18, N19, N250, Z490, Z491, Z492, Z940, Z992 JAEA003, HNEA002, JVJB001, JVJF004, JVJF008, JVRP004, JVRP007, JVRP008, YYYYY007, 2121-2129, 2131, 2132, 2134-2140, 2142-2146,2334,		.
Any tumor (including lymphoma and leukemia except for malignant neoplasm of skin)	C00-C26, C30-C34, C37-C41, C43, C45-C58, C60-C76, C81-C85, C88, C90-C97		.
Metastatic solid tumor	C77-C80		.
HIV-AIDS	B20-B22, B24, Z21		
Other comorbidities			
Dyslipidemia without associated pathology: <i>no code for coronary heart disease or stroke or heart failure or atherosclerosis of arteries of extremities or chronic end-stage kidney failure or diabetes **</i>	.		Reimbursement on at least 3 occasions: - statins: C10AA, C10BA, C10BX - fibrates: C10AB - other lipid-lowering agents: C10AC, C10AD, C10AX
Other hospital discharge diagnosis related to tobacco	F17, Z71.6, Z72.0	.	Reimbursement on at least 3 occasions: - nicotine: N07BA01

Disease	ICD-10 in-hospital* and medical procedures	ICD-10 LTD*	Medications (ATC Codes)*
			- varenicline: N07BA03 - cytisine: N07BA04
Morbid or complicated obesity	E66 Medical acts in the year n to n-5: HFCA001, HFCC003, HFFA001, HFFA011, HFFC004, HFFC018, HFMA009, HFMA010, HFMC006, HFMC007, HGCA009, HGCC027, HFLE002, HFLC900, HFGC900, HFKC001, HFKA002, HFMC008, HFMA011, HFKA001	.	.

* Recorded during the 12 months before inclusion.

** Use of disease definition algorithms developed by the French National Health Insurance Fund for Employees.

♦ The definition of diabetes with end-organ damage was completed by identification of diabetes plus at least one of the following conditions: myocardial infarction, moderate or severe renal disease, or cerebrovascular disease.

ICD-10: International Classification of Diseases, 10th edition; LTD: long-term disease; ATC: Anatomical Therapeutic Chemical; IBD: inflammatory bowel disease; HIV-AIDS: Human immunodeficiency virus-acquired immunodeficiency syndrome

eTable 2. New Biologic Agent Users According to Biologic Treatment for the Psoriasis (n = 16 892) and the Psoriatic Arthritis (n = 6531) Cohorts

	Psoriasis cohort	Psoriatic arthritis cohort
TNF inhibitors	n = 10,199	n = 4,974
Adalimumab	5,944 (35.2)	2,380 (36.4)
Certolizumab	408 (2.4)	359 (5.5)
Etanercept	2,057 (12.2)	1,610 (24.6)
Golimumab	-	583 (8.9)
Infliximab	1,790 (10.6)	42 (0.6)
IL12/23 inhibitor	n = 3,982	n = 803
Ustekinumab	3,982 (23.6)	803 (10.8)
IL17 inhibitors	n = 2,711	n = 754
Secukinumab	2,133 (12.6)	696 (10.6)
Ixekizumab	502 (3.0)	58 (0.9)
Brodalumab	76 (0.4)	-

Data are n (%).

TNF: tumor necrosis factor; IL: interleukin.

eTable 3. Comparison of Treatment Classes in Sensitivity Analyses for the Psoriasis Cohort

	IL17i vs TNFi		IL12/23i vs TNFi		IL17i vs IL12/23i	
	HR _w (95% CI)	p-value	HR _w (95% CI)	p-value	HR _w (95% CI)	p-value
Intention-to-treat analysis	0.86 (0.78-0.96)	<10⁻³	0.92 (0.84-1.00)	0.05	0.93 (0.83-1.06)	0.29
Discontinuation: gap 30	0.77 (0.72-0.82)	<10⁻⁴	0.77 (0.73-0.81)	<10⁻⁴	1.00 (0.93-1.08)	0.99
Discontinuation: gap 90	0.79 (0.74-0.84)	<10⁻⁴	0.76 (0.72-0.80)	<10⁻⁴	1.03 (0.96-1.11)	0.37
New users: 5-years	0.74 (0.69-0.79)	<10⁻⁴	0.73 (0.69-0.77)	<10⁻⁴	1.01 (0.93-1.10)	0.73
After the market entry of all studied therapeutic class	0.81 (0.73-0.89)	<10⁻⁴	0.81 (0.74-0.88)	<10⁻⁴	1.00 (0.89-1.12)	0.97

Values in bold correspond to significant results. *HR_w*: weighted hazard ratio; *95%CI*: 95% confidence interval; *ILi*: interleukin inhibitor; *TNFi*: tumor necrosis factor inhibitor.

eTable 4. Comparison of Treatment Classes in Sensitivity Analyses for the Psoriatic Arthritis Cohort

	IL17i vs TNFi		IL12/23i vs TNFi		IL17i vs IL12/23i	
	HR _w (95%CI)	p-value	HR _w (95%CI)	p-value	HR _w (95%CI)	p-value
Intention-to-treat analysis	0.72 (0.58-0.89)	<10⁻³	1.02 (0.86-1.20)	0.84	0.70 (0.54-0.91)	<10⁻³
Discontinuation: gap 30	0.70 (0.58-0.84)	<10⁻⁴	1.04 (0.90-1.19)	0.59	0.67 (0.54-0.84)	<10⁻⁴
Discontinuation: gap 90	0.71 (0.58-0.86)	<10⁻⁴	1.03 (0.89-1.19)	0.70	0.68 (0.55-0.86)	<10⁻³
New-users: 5-years	0.73 (0.58-0.92)	<10⁻³	1.19 (0.98-1.44)	0.07	0.61 (0.57-0.82)	<10⁻⁴
After the market entry of all studied therapeutic class	0.57 (0.43-0.76)	<10⁻⁴	1.00 (0.66-1.41)	0.90	0.73 (0.51-1.06)	0.09

Values in bold correspond to significant results. *HR_w*: weighted hazard ratio; *95%CI*: 95% confidence interval; *ILi*: interleukin inhibitor; *TNFi*: tumor necrosis factor inhibitor.

eTable 5. Results of the Conventional Multivariate Cox Proportional Hazards Model (Sensitivity Analyses)

	Psoriasis cohort*		Psoriatic arthritis cohort*	
	HR _a (95%CI)	p-value	HR _a (95%CI)	p-value
IL17i vs TNFi	0.77 (0.72-0.82)	<10 ⁻⁴	0.73 (0.61-0.89)	<10 ⁻³
IL12/23i vs TNFi	0.75 (0.71-0.79)	<10 ⁻⁴	0.95 (0.81-1.11)	0.53
IL17i vs IL12/23i	1.03 (0.95-1.11)	0.46	0.77 (0.61-0.97)	0.03
Age	0.99 (0.99-0.99)	<10 ⁻⁴	0.99 (0.99-0.99)	0.04
Sex (ref : male)	1.33 (1.28-1.40)	<10 ⁻⁴	1.38 (1.29-1.47)	<10 ⁻⁴
Complementary universal health coverage	1.19 (1.11-1.28)	<10 ⁻⁴	0.98 (0.84-1.15)	0.05
Charlson score (ref: 1)				
2	1.18 (1.12-1.25)	<10 ⁻⁴	1.22 (1.21-1.34)	<10 ⁻⁴
3	1.29 (1.06-1.56)	<10 ⁻³	1.32 (1.12-1.65)	<10 ⁻⁴
4	1.03 (0.61-1.72)	0.91	1.06 (0.81-1.92)	0.12
Smoking	0.98 (0.72-1.32)	0.88	1.08 (0.97-1.20)	0.29
Obesity	1.28 (1.08-1.51)	<10 ⁻³	1.20 (0.97-1.20)	0.17
Associated non-biologic drugs within 2 years (ref: 0)				
1	1.01 (0.95-1.07)	0.69	1.12 (0.84-1.17)	0.72
2	1.07 (1.00-1.15)	0.03	1.21 (1.10-1.65)	0.02
3	1.23 (1.11-1.35)	<10 ⁻⁴	1.34 (1.25-1.45)	<10 ⁻⁴
Number of specialist visits within 2 years (ref: 0)				
1	1.08 (0.98-1.18)	0.11	1.08 (0.98-1.18)	0.11
2	0.98 (0.93-1.03)	0.50	0.87 (0.76-0.97)	0.04
Hospitalization within 2 years	1.09 (1.02-1.16)	<10 ⁻³	1.07 (0.98-1.16)	0.12

Values in bold correspond to significant results. *The co-reimbursement of non-biologic drugs or prednisone with biologics was considered a time-varying variable. HR_a: adjusted hazard ratio; 95%CI: 95% confidence interval; ILi: interleukin inhibitor; TNFi: tumor necrosis factor inhibitor.