# Supplemental Online Content

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**eReferences.**

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

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**eTable 1. Algorithms used to identify individuals with immune-mediated inflammatory diseases**

| Type of IMID | Diagnostic Codes[a] | Algorithm | Accuracy | Defining IMID Duration |
|---|---|---|---|---|
| Ankylosing spondylitis | *OHIP:* 720<br>*ICD-9:* 720.0<br>*ICD-10:* M45 | • ≥3 physician claims including ≥1 by a rheumatologist or general internist within 3 years, or<br>• ≥1 hospitalization with any of the specified ICD-9 or ICD-10 codes listed as reason for hospitalization or co-morbid condition (primary, secondary, or type 3 diagnosis) | N/A (not validated) | Time from first diagnostic code to date of infection |
| Inflammatory bowel disease, including subtypes Crohn's disease and ulcerative colitis (1, 2) | *OHIP:* 555, 556<br>*ICD-9:* 555.x, 556.x<br>*ICD-10:* K50.x, K51.x | **Identifying IBD Cases**<br>Pediatrics (<18y):<br>• Underwent colonoscopy: ≥4 physician claims or ≥2 hospitalizations within 3 years, or<br>• Did not undergo colonoscopy: ≥7 physician claims or ≥3 hospitalizations within 3 years<br><br>Adults (18-64y):<br>• ≥5 physician claims or hospitalizations within 4 years<br><br>Seniors (≥65y):<br>• ≥5 physician claims or hospitalizations within 4 years, and<br>• ≥1 prescription for an IBD-related medication | **Identifying IBD Cases**[b]<br>Pediatrics (<18y):<br>• Sens: 89.6% (91.1%)<br>• Spec: >99.9% (99.5%)<br>• PPV: 59.2%<br>• NPV: >99.9%<br><br>Adults (18-64y):<br>• Sens: 76.8% (92.3%)<br>• Spec: 96.2% (99.1%)<br>• PPV: 81.4%<br>• NPV: 95.0% | For incident cases (3y washout period for pediatrics, 8 y washout for adults, seniors):<br>• Time from first diagnostic code to date of infection<br><br>For prevalent cases (did not meet minimum washout period for incident cases): ≥5 years |

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| Type of IMID | Diagnostic Codes[a] | Algorithm | Accuracy | Defining IMID Duration |
|---|---|---|---|---|
| | | **Differentiating subtypes of IBD:**<br>Pediatrics:<br>• 5 of last 7 outpatient contacts<br><br>Adults/Seniors:<br>• 5 of last 9 outpatient contacts | Seniors (≥65y):<br>• Sens: 59.3% (78.3%)<br>• Spec: 99.0% (98.2%)<br>• PPV: 71.1%<br>• NPV: 98.3%<br><br>**Differentiating subtypes of IBD:**<br>Pediatrics:<br>• Sens: 95.1%<br>• Spec: 86.0%<br>• PPV: 92.0%<br>• NPV: 91.2%<br><br>Adults/Seniors:<br>• Accuracy: 91.1% | |
| Multiple sclerosis (3) | *OHIP:* 340<br>*ICD-9:* 340<br>*ICD-10:* G35 | • ≥ 5 physician claims within 2 years, or<br>• ≥1 hospitalization with any of the specified ICD-9 or ICD-10 codes listed as reason for hospitalization or co-morbid condition (primary, secondary, or type 3 diagnosis) | • Sens: 84.2%<br>• Spec: 100%<br>• PPV: 86.0%<br>• NPV: 99.9% | Time from first diagnostic code to date of infection |
| Polymyalgia rheumatica | *OHIP:* 725<br>*ICD-9:* 725<br>*ICD-10:* M35.3 | • ≥3 physician claims including ≥1 with a rheumatologist or | N/A (not validated) | Time from first diagnostic code to date of infection |

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| Type of IMID | Diagnostic Codes[a] | Algorithm | Accuracy | Defining IMID Duration |
|---|---|---|---|---|
| | | general internist within 3 years, or<br>• ≥1 hospitalization with any of the specified ICD-9 or ICD-10 codes listed as reason for hospitalization or co-morbid condition (primary, secondary, or type 3 diagnosis) | | |
| Psoriasis (4) | *OHIP:* 696<br>*ICD-9:* 696.1, 696.8<br>*ICD-10:* L40.0, L40.1, L40.2, L40.3, L40.4, L40.8, L40.9 | • ≥3 physician claims, or<br>• ≥1 hospitalization with any of the specified ICD-9 or ICD-10 codes listed as reason for hospitalization or co-morbid condition (primary, secondary, or type 3 diagnosis) | Definite psoriasis:<br>• Spec: 40.6%<br>• PPV: 99.4%<br>• NPV: 71.0%<br><br>Definite and possible psoriasis:<br>• Sens: 98.0%<br>• Spec: 30.8 %<br>• PPV: 99.5%<br>• NPV: 74.7% | Time from first diagnostic code to date of infection |
| Psoriatic arthritis (4) | *OHIP:* 696 (psoriasis), 721 (spondylarthritis)<br>*ICD-9:* 696.0<br>*ICD-10:* L40.5, M07.0, M07.1, M07.2, M07.3, M09.0 | • ≥3 physician claims with a diagnostic code for spondylarthritis including ≥1 by a rheumatologist or general internist and ≥1 physician claim with a diagnostic code for psoriasis (by any specialty), or<br>• ≥1 hospitalization with any of the specified ICD-9 or ICD-10 codes listed as reason for | Definite psoriatic arthritis:<br>• Sens: 48.1%<br>• Spec: 99.9%<br>• PPV: 66.1%<br>• NPV: 99.9%<br><br>Definite and possible psoriatic arthritis: | Time from first diagnostic code to date of infection |

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| Type of IMID | Diagnostic Codes[a] | Algorithm | Accuracy | Defining IMID Duration |
|---|---|---|---|---|
| | | hospitalization or co-morbid condition (primary, secondary, or type 3 diagnosis) | • Sens: 28.6%<br>• Spec: 100%<br>• PPV: 72.7%<br>• NPV: 99.7% | |
| Rheumatoid arthritis (5, 6) | *OHIP:* 714<br>*ICD-9:* 714<br>*ICD-10:* M05, M06 | ≥15 years of age and<br>• ≥1 hospitalization, or<br>• ≥3 physician claims including ≥1 with a musculoskeletal specialist (rheumatologist, orthopedic surgeon, or Internal medicine specialist) in two years | Data from selected rheumatology clinics:<br>• Sens: 97%<br>• Spec: 85%<br>• PPV: 76%<br>• NPV:98%<br><br>EMR data:<br>• Sens: 78%<br>• Spec: 100%<br>• PPV: 78%<br>• NPV: 100% | Time from first diagnostic code to date of infection |
| Systemic autoimmune rheumatic disease | *OHIP:* 710<br>*ICD-9:* 710.0-710.9<br>*ICD-10:* M32, M33, M34, M35.0 | • ≥3 physician claims including ≥1 by a rheumatologist or general internist within 3 years, or<br>• ≥1 hospitalization with any of the specified ICD-9 or ICD-10 codes listed as reason for hospitalization or co-morbid condition (primary, secondary, or type 3 diagnosis) | N/A (not validated) | Time from first diagnostic code to date of infection |

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| Type of IMID | Diagnostic Codes[a] | Algorithm | Accuracy | Defining IMID Duration |
|---|---|---|---|---|
| Uveitis | *OHIP:* 364<br>*ICD-9:* 364.0<br>*ICD-10:* H20.0 | • ≥5 physician claims including ≥1 by an ophthalmologist, or<br>• ≥1 hospitalization with any of the specified ICD-9 or ICD-10 codes listed as reason for hospitalization or co-morbid condition (primary, secondary, or type 3 diagnosis) | N/A (not validated) | Time from first diagnostic code to date of infection |
| Vasculitis | *OHIP:* 446, 447<br>*ICD-9:* 446.0, 446.2, 446.4, 446.5, 446.7<br>*ICD-10:* M30, M31.0, M31.3, M31.4, M31.5, M31.7 | • ≥3 physician claims including ≥1 by a rheumatologist, or<br>• ≥1 hospitalization with any of the specified ICD-9 or ICD-10 codes listed as reason for hospitalization or co-morbid condition (primary, secondary, or type 3 diagnosis) | N/A (not validated) | Time from first diagnostic code to date of infection |

[a]OHIP codes are an abbreviated list of ICD-9 codes used for outpatient physician billing; ICD-9 codes are included hospital records prior to April 1, 2002; ICD-10 codes are used for hospital records beginning on April 1, 2002
[b]Accuracy of algorithm in the validation cohort is reported in parentheses.
Abbreviations: EMR, electronic medical record; ICD, International Classification of Diseases; NPV, negative predictive value; OHIP, Ontario Health Insurance Plan; PPV, positive predictive value; Sens, sensitivity; Spec, specificity; y, years

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**eTable 2. International Classification of Diseases (ICD)-10 codes used to identify individuals developing a venous thromboembolism**

| Type of Venous Thromboembolism | ICD-10 Code | Description |
|---|---|---|
| Deep vein thrombosis | I82.2 | Embolism and thrombosis of vena cava |
| | I82.3 | Embolism and thrombosis of renal vein |
| | I82.8 | Embolism and thrombosis of other specified veins |
| | I82.9 | Embolism and thrombosis of unspecified vein |
| | O22.3 | Deep phlebothrombosis in pregnancy |
| | O22.9 | Venous complication in pregnancy, unspecified |
| | O87.1 | Deep phlebothrombosis in the puerperium |
| Pulmonary embolism | I26.x | Pulmonary embolism |
| Portal vein thrombosis | I81 | Portal vein thrombosis |
| Mesenteric thrombosis | K55.0 | Acute vascular disorders of the intestine |
| Supraventricular vein thrombosis | G08.x | Intracranial and intraspinal phlebitis and thrombophlebitis |
| | I67.6 | Non-pyogenic thrombosis of intracranial venous system |

Abbreviations: ICD, International Classification of Diseases

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**eTable 3. International Classification of Disease (ICD)-10 codes for immune-mediated inflammatory diseases that were excluded from the adapted version of the Charlson Comorbidity Index used in this study**

| Type of IMID | ICD-10 Codes Excluded |
|---|---|
| Rheumatoid arthritis | M05, M06 |
| Systemic autoimmune rheumatic disease | M32, M33, M34, M35.0, M35.1, M35.3 |
| Polymyalgia rheumatica | M35.3 |
| Vasculitis | M31.5 |

Abbreviations: ICD, International Classification of Diseases; IMID, immune-mediated inflammatory diseases

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**eTable 4. Previously validated algorithms used to identify individuals with selected comorbidities**

| Comorbidity | Diagnostic Codes[a] | Algorithm | Accuracy |
|---|---|---|---|
| Chronic obstructive pulmonary disease (7) | *OHIP:* 491, 492, 496<br>*ICD-9:* 491, 492, 496<br>*ICD-10:* J41, J42, J43, J44 | ≥35 years of age and<br>• ≥1 hospitalization or encounter in the CIHI Same Day Surgery database, or<br>• ≥3 physician claims within 2 years | • Sens: 57.5%<br>• Spec: 95.4%<br>• PPV: 81.3%<br>• NPV: 86.7% |
| Congestive heart failure (8) | *OHIP:*<br>• Diagnostic code: 428<br>• Fee code: Q050<br>*ICD-9:* 428<br>*ICD-10:* I50,0, I50.1, I50.9 | ≥40 years of age and<br>• ≥1 hospitalization, or<br>• ≥1 physician claim (diagnostic or fee code) or emergency department visit and ≥1 additional encounter of any form (outpatient, emergency department, or hospitalization) within 1 year | • Sens: 84.8%<br>• Spec: 97.0 %<br>• PPV: 55.6% |
| Diabetes (9, 10) | *OHIP*:<br>• Diagnostic code: 250<br>• Fee codes: Q040, K029, K030, K045, K046<br>*ICD-9:* 250<br>*ICD-10:* E10, E11, E13, E14<br>*Medications:* insulin, oral anti-glycemics | Pediatrics (≤18y):<br>• ≥4 physician claims with diagnostic code for diabetes within 2 years, or<br>• ≥1 physician claims with fee code for diabetes<br>• ≥1 of these encounters occurs before an individual's 19th birthday<br><br>Adults (>18y):<br>• ≥2 physician claims with a diagnostic code for diabetes within 1 year, or<br>• ≥1 prescription for a diabetes medication, or<br>• ≥1 hospitalization<br>• All encounters occur after an individual's 19th birthday | Pediatrics (≤18y):<br>• Sens: 82.8%<br>• Spec: 98.9%<br><br>Adults (>18y):<br>• Sens: 90.0%<br>• Spec: 97.7% |

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| Comorbidity | Diagnostic Codes[a] | Algorithm | Accuracy |
|---|---|---|---|
| | | Physician claims, prescription records, or hospitalizations occurring up to 120 days before and 180 days after a hospital record with a diagnostic code for pregnancy care or delivery was considered to be related to gestational diabetes and excluded from the case definitions described above. | • PPV: 82.6%<br>• NPV: 98.8% |

Abbreviations: CI, confidence interval; CIHI, Canadian Institute for Health Information; ICD, International Classification of Diseases; NPV, negative predictive value; OHIP, Ontario Health Insurance Plan; PPV, positive predictive value; Sens, sensitivity; Spec, specificity; y, years

[a]OHIP codes are an abbreviated list of ICD-9 codes used for outpatient physician billing; ICD-9 codes are included hospital records prior to April 1, 2002; ICD-10 codes are used for hospital records beginning on April 1, 2002

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**eTable 5. Demographics and clinical characteristics of individuals with immune-mediated inflammatory diseases (IMIDs) and matched people without an IMID on the date of positive COVID-19 test, stratified by type of IMID**

| Characteristic | People with Specified IMID | Matched People without an IMID |
|---|---|---|
| **Ankylosing Spondylitis** | | |
| n | 1453 | 6600 |
| Age (years), mean (SD) | 50.8 (15.7) | 49.5 (14.9) |
| Female, n (%) | 699 (48.1) | 3151 (48.7) |
| Rural, n (%) | 50 (3.4) | 100 (1.5) |
| Mean neighborhood income quintile, n (%) | | |
| 1 (lowest) | 301 (20.7) | 1378 (20.9) |
| 2 | 282 (19.4) | 1293 (19.6) |
| 3 | 300 (20.6) | 1398 (21.2) |
| 4 | 293 (20.2) | 1313 (19.9) |
| 5 (highest) | 277 (19.1) | 1218 (18.5) |
| Previous VTE, n (%) | 13 (0.9) | 41 (0.6) |
| Chronic obstructive pulmonary disease, n (%) | 58 (4.0) | 112 (1.7) |
| Congestive heart failure, n (%) | 52 (3.6) | 137 (2.1) |
| Diabetes, n (%) | 268 (18.4) | 1066 (16.2) |
| Charlson Comorbidity Index, median (Q1, Q3) | 1 (0, 2) | 0 (0, 1) |
| IMID duration, n (%) | | |
| <1 year | 79 (5.4) | N/A |
| 1 to <3 years | 189 (13.0) | N/A |
| 3 to <5 years | 179 (12.3) | N/A |
| ≥5 years | 1006 (69.2) | N/A |
| Number of additional IMIDs, n (%) | | |
| 0 | 830 (57.1) | N/A |
| 1 | 413 (28.4) | N/A |
| ≥2 | 210 (14.5) | N/A |
| COVID-19 vaccination, n (%) | 447 (30.8) | 1915 (29.0) |
| **Inflammatory Bowel Disease** | | |
| n | 4331 | 19,903 |
| Age (years), mean (SD) | 46.0 (17.2) | 44.7 (16.5) |
| Female, n (%) | 2166 (50.0) | 9892 (49.7) |
| Rural, n (%) | 150 (3.5) | 328 (1.6) |
| Mean neighborhood income quintile, n (%) | | |
| 1 (lowest) | 754 (17.4) | 3447(17.3) |
| 2 | 856 (19.8) | 3944 (19.8) |
| 3 | 900 (20.8) | 4124 (20.7) |
| 4 | 894 (20.6) | 4086 (20.5) |

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| Characteristic | People with Specified IMID | Matched People without an IMID |
|---|---|---|
| 5 (highest) | 927 (21.4) | 4302 (21.6) |
| Previous VTE, n (%) | 63 (1.5) | 96 (0.5) |
| Chronic obstructive pulmonary disease, n (%) | 126 (2.9) | 287 (1.4) |
| Congestive heart failure, n (%) | 128 (3.0) | 297 (1.5) |
| Diabetes, n (%) | 563 (13.0) | 2521 (12.7) |
| Charlson Comorbidity Index, median (Q1, Q3) | 0 (0, 1) | 0 (0, 1) |
| Type of IBD, n (%) | | |
| Crohn's disease | 1888 (43.6) | N/A |
| Ulcerative colitis | 2260 (52.2) | N/A |
| IBD-U | 183 (4.2) | N/A |
| IMID duration, n (%) | | |
| <1 year | 68 (1.6) | N/A |
| 1 to <3 years | 340 (7.9) | N/A |
| 3 to <5 years | 407 (9.4) | N/A |
| ≥5 years | 3516 (81.2) | N/A |
| Number of additional IMIDs, n (%) | | |
| 0 | 3807 (87.9) | N/A |
| 1 | 423 (9.8) | N/A |
| ≥2 | 101 (2.3) | N/A |
| COVID-19 vaccination, n (%) | 1469 (33.9) | 6521 (32.8) |
| **Multiple Sclerosis** | | |
| n | 1954 | 8799 |
| Age (years), mean (SD) | 50.6 (15.6) | 49.3 (15.1) |
| Female, n (%) | 1381 (70.7) | 6201 (70.6) |
| Rural, n (%) | 73 (3.7) | 159 (1.8) |
| Mean neighborhood income quintile, n (%) | | |
| 1 (lowest) | 440 (22.5) | 1989 (22.7) |
| 2 | 413 (21.1) | 1847 (21.0) |
| 3 | 376 (19.2) | 1718 (19.6) |
| 4 | 381 (19.5) | 1707 (19.4) |
| 5 (highest) | 344 (17.6) | 1518 (17.3) |
| Previous VTE, n (%) | 40 (2.0) | 43 (0.5) |
| Chronic obstructive pulmonary disease, n (%) | 59 (3.0) | 184 (2.1) |
| Congestive heart failure, n (%) | 84 (4.3) | 189 (2.2) |
| Diabetes, n (%) | 306 (15.7) | 1304 (14.9) |
| Charlson Comorbidity Index, median (Q1, Q3) | 1 (0, 2) | 0 (0, 1) |
| IMID duration, n (%) | | |
| <1 year | 103 (5.3) | N/A |

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| Characteristic | People with Specified IMID | Matched People without an IMID |
|---|---|---|
| 1 to <3 years | 229 (11.7) | N/A |
| 3 to <5 years | 162 (8.3) | N/A |
| ≥5 years | 1,460 (74.7) | N/A |
| Number of additional IMIDs, n (%) | | |
| 0 | 1805 (92.4) | N/A |
| 1 | 126 (6.5) | N/A |
| ≥2 | 23 (1.2) | N/A |
| COVID-19 vaccination, n (%) | 522 (26.7) | 2425 (27.6) |
| **Polymyalgia Rheumatica** | | |
| n | 535 | 1902 |
| Age (years), mean (SD) | 76.6 (13.1) | 74.5 (13.6) |
| Female, n (%) | 354 (66.2) | 1241 (65.2) |
| Rural, n (%) | 12 (2.2) | 23 (1.2) |
| Mean neighborhood income quintile, n (%) | | |
| 1 (lowest) | 116 (21.7) | 449 (23.6) |
| 2 | 120 (22.4) | 436 (22.9) |
| 3 | 111 (20.7) | 391 (20.6) |
| 4 | 98 (18.3) | 356 (18.7) |
| 5 (highest) | 90 (16.8) | 270 (14.2) |
| Previous VTE, n (%) | 17 (3.2) | 30 (1.6) |
| Chronic obstructive pulmonary disease, n (%) | 60 (11.2) | 155 (8.1) |
| Congestive heart failure, n (%) | 114 (21.3) | 293 (15.4) |
| Diabetes, n (%) | 212 (39.6) | 722 (38.0) |
| Charlson Comorbidity Index, median (Q1, Q3) | 2 (1, 5) | 2 (1, 3) |
| IMID duration, n (%) | | |
| <1 year | 60 (11.2) | N/A |
| 1 to <3 years | 111 (20.7) | N/A |
| 3 to <5 years | 88 (16.4) | N/A |
| ≥5 years | 276 (51.6) | N/A |
| Number of additional IMIDs, n (%) | | |
| 0 | 359 (67.1) | N/A |
| 1 | 139 (26.0) | N/A |
| ≥2 | 37 (6.9) | N/A |
| COVID-19 vaccination, n (%) | 97 (18.1) | 321 (16.9) |
| **Psoriatic Arthritis** | | |
| N | 1134 | 5085 |
| Age (years), mean (SD) | 54.1 (14.6) | 52.7 (14.0) |
| Female, n (%) | 584 (51.5) | 2553 (50.2) |
| Rural, n (%) | 35 (3.1) | 95 (1.9) |

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| Characteristic | People with Specified IMID | Matched People without an IMID |
|---|---|---|
| Mean neighborhood income quintile, n (%) | | |
| 1 (lowest) | 252 (22.2) | 1116 (21.9) |
| 2 | 209 (18.4) | 961 (18.9) |
| 3 | 210 (18.5) | 971 (19.1) |
| 4 | 231 (20.4) | 1027 (20.2) |
| 5 (highest) | 232 (20.5) | 1010 (19.9) |
| Previous VTE event, n (%) | 15 (1.3) | 36 (0.7) |
| Chronic obstructive pulmonary disease, n (%) | 40 (3.5) | 123 (2.4) |
| Congestive heart failure, n (%) | 56 (4.9) | 128 (2.5) |
| Diabetes, n (%) | 292 (25.7) | 901 (17.7) |
| Charlson Comorbidity Index, median (Q1, Q3) | 1 (0, 2) | 0 (0, 1) |
| IMID duration, n (%) | | |
| <1 year | 26 (2.3) | N/A |
| 1 to <3 years | 64 (5.6) | N/A |
| 3 to <5 years | 81 (7.1) | N/A |
| ≥5 years | 963 (84.9) | N/A |
| Number of additional IMIDs, n (%) | | |
| 0 | 162 (14.3) | N/A |
| 1 | 622 (54.9) | N/A |
| ≥2 | 350 (30.9) | N/A |
| COVID-19 vaccination, n (%) | 355 (31.3) | 1478 (29.1) |
| **Psoriasis** | | |
| n | 10,739 | 48,743 |
| Age (years), mean (SD) | 49.9 (18.2) | 48.3 (17.4) |
| Female, n (%) | 5424 (50.5) | 24,500 (50.3) |
| Rural, n (%) | 342 (3.2) | 763 (1.6) |
| Mean neighborhood income quintile, n (%) | | |
| 1 (lowest) | 2252 (21.0) | 10,273 (21.1) |
| 2 | 2147 (20.0) | 9772 (20.0) |
| 3 | 2199 (20.5) | 10,103 (20.7) |
| 4 | 2126 (19.8) | 9631 (19.8) |
| 5 (highest) | 2015 (18.8) | 8964 (18.4) |
| Previous VTE, n (%) | 97 (0.9) | 322 (0.7) |
| Chronic obstructive pulmonary disease, n (%) | 390 (3.6) | 1034 (2.1) |
| Congestive heart failure, n (%) | 448 (4.2) | 1284 (2.6) |
| Diabetes, n (%) | 2138 (19.9) | 7719 (15.8) |
| Charlson Comorbidity Index, median (Q1, Q3) | 0 (0, 2) | 0 (0, 1) |

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| Characteristic | People with Specified IMID | Matched People without an IMID |
|---|---|---|
| IMID duration, n (%) | | |
| <1 year | 299 (2.8) | N/A |
| 1 to <3 years | 782 (7.3) | N/A |
| 3 to <5 years | 783 (7.3) | N/A |
| ≥5 years | 8875 (82.6) | N/A |
| Number of additional IMIDs, n (%) | | |
| 0 | 9302 (86.6) | N/A |
| 1 | 1051 (9.8) | N/A |
| ≥2 | 386 (3.6) | N/A |
| COVID-19 vaccination, n (%) | 2996 (27.9) | 13,649 (28.0) |
| **Rheumatoid Arthritis** | | |
| n | 5883 | 24,993 |
| Age (years), mean (SD) | 59.5 (17.4) | 57.2 (16.9) |
| Female, n (%) | 4329 (73.6) | 18,352 (73.4) |
| Rural, n (%) | 206 (3.5) | 393 (1.6) |
| Mean neighborhood income quintile, n (%) | | |
| 1 (lowest) | 1340 (22.8) | 5721 (22.9) |
| 2 | 1274 (21.7) | 5446 (21.8) |
| 3 | 1267 (21.5) | 5524 (22.1) |
| 4 | 1061 (18.0) | 4490 (18.0) |
| 5 (highest) | 941 (16.0) | 3812 (15.3) |
| Previous VTE, n (%) | 125 (2.1) | 211 (0.8) |
| Chronic obstructive pulmonary disease, n (%) | 440 (7.5) | 869 (3.5) |
| Congestive heart failure, n (%) | 483 (8.2) | 1175 (4.7) |
| Diabetes, n (%) | 1579 (26.8) | 5777 (23.1) |
| Charlson Comorbidity Index, median (Q1, Q3) | 2 (1, 3) | 0 (0, 2) |
| IMID duration, n (%) | | |
| <1 year | 271 (4.6) | N/A |
| 1 to <3 years | 797 (13.5) | N/A |
| 3 to <5 years | 790 (13.4) | N/A |
| ≥5 years | 4,025 (68.4) | N/A |
| Number of additional IMIDs, n (%) | | |
| 0 | 4480 (76.2) | N/A |
| 1 | 998 (17.0) | N/A |
| ≥2 | 405 (6.9) | N/A |
| COVID-19 vaccination, n (%) | 1357 (23.1) | 5669 (22.7) |
| **Systemic Autoimmune Rheumatic Disease** | | |
| n | 2506 | 11,265 |
| Age (years), mean (SD) | 51.7 (17.5) | 50.0 (16.6) |

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| Characteristic | People with Specified IMID | Matched People without an IMID |
|---|---|---|
| Female, n (%) | 2141 (85.4) | 9674 (85.9) |
| Rural, n (%) | 78 (3.1) | 173 (1.5) |
| Mean neighborhood income quintile, n (%) | | |
| 1 (lowest) | 563 (22.5) | 2566 (22.8) |
| 2 | 501 (20.0) | 2234 (19.8) |
| 3 | 534 (21.3) | 2412 (21.4) |
| 4 | 451 (18.0) | 2056 (18.3) |
| 5 (highest) | 457 (18.2) | 1997 (17.7) |
| Previous VTE, n (%) | 86 (3.4) | 86 (0.8) |
| Chronic obstructive pulmonary disease, n 9%) | 127 (5.1) | 218 (1.9) |
| Congestive heart failure, n (%) | 174 (6.9) | 283 (2.5) |
| Diabetes, n (%) | 480 (19.2) | 1827 (16.2) |
| Charlson Comorbidity Index, median (Q1, Q3) | 1 (0, 3) | 0 (0, 1) |
| IMID duration, n (%) | | |
| <1 year | 176 (7.0) | N/A |
| 1 to <3 years | 373 (14.9) | N/A |
| 3 to <5 years | 294 (11.7) | N/A |
| ≥5 years | 1663 (66.4) | N/A |
| Number of additional IMIDs, n (%) | | |
| 0 | 1854 (74.0) | N/A |
| 1 | 555 (22.2) | N/A |
| ≥2 | 97 (3.9) | N/A |
| COVID-19 vaccination, n (%) | 664 (26.5) | 3025 (26.9) |
| **Uveitis** | | |
| n | 3000 | 12,742 |
| Age (years), mean (SD) | 57.8 (19.8) | 55.0 (19.0) |
| Female, n (%) | 1635 (54.5) | 6805 (53.4) |
| Rural, n (%) | 84 (2.8) | 191 (1.5) |
| Mean neighborhood income quintile, n (%) | | |
| 1 (lowest) | 739 (24.6) | 3144 (24.7) |
| 2 | 606 (20.2) | 2593 (20.4) |
| 3 | 599 (20.0) | 2610 (20.5) |
| 4 | 550 (18.3) | 2330 (18.3) |
| 5 (highest) | 506 (16.9) | 2065 (16.2) |
| Previous VTE, n (%) | 40 (1.3) | 104 (0.8) |
| Chronic obstructive pulmonary disease, n (%) | 176 (5.9) | 433 (3.4) |
| Congestive heart failure, n (%) | 226 (7.5) | 593 (4.7) |
| Diabetes, n (%) | 856 (28.5) | 2692 (21.1) |

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| Characteristic | People with Specified IMID | Matched People without an IMID |
|---|---|---|
| Charlson Comorbidity Index, median (Q1, Q3) | 1 (0, 2) | 0 (0, 2) |
| IMID duration, n (%) | | |
| <1 year | 119 (4.0) | N/A |
| 1 to <3 years | 195 (6.5) | N/A |
| 3 to <5 years | 244 (8.1) | N/A |
| ≥5 years | 2442 (81.4) | N/A |
| Number of additional IMIDs, n (%) | | |
| 0 | 2478 (82.6) | N/A |
| 1 | 420 (14.0) | N/A |
| ≥2 | 102 (3.4) | N/A |
| COVID-19 vaccination, n (%) | 706 (23.5) | 3094 (24.3) |

Abbreviations: IBD, inflammatory bowel disease; IBD-U, inflammatory bowel disease type unclassifiable; IMID, immune-mediated inflammatory disease; VTE, venous thromboembolism

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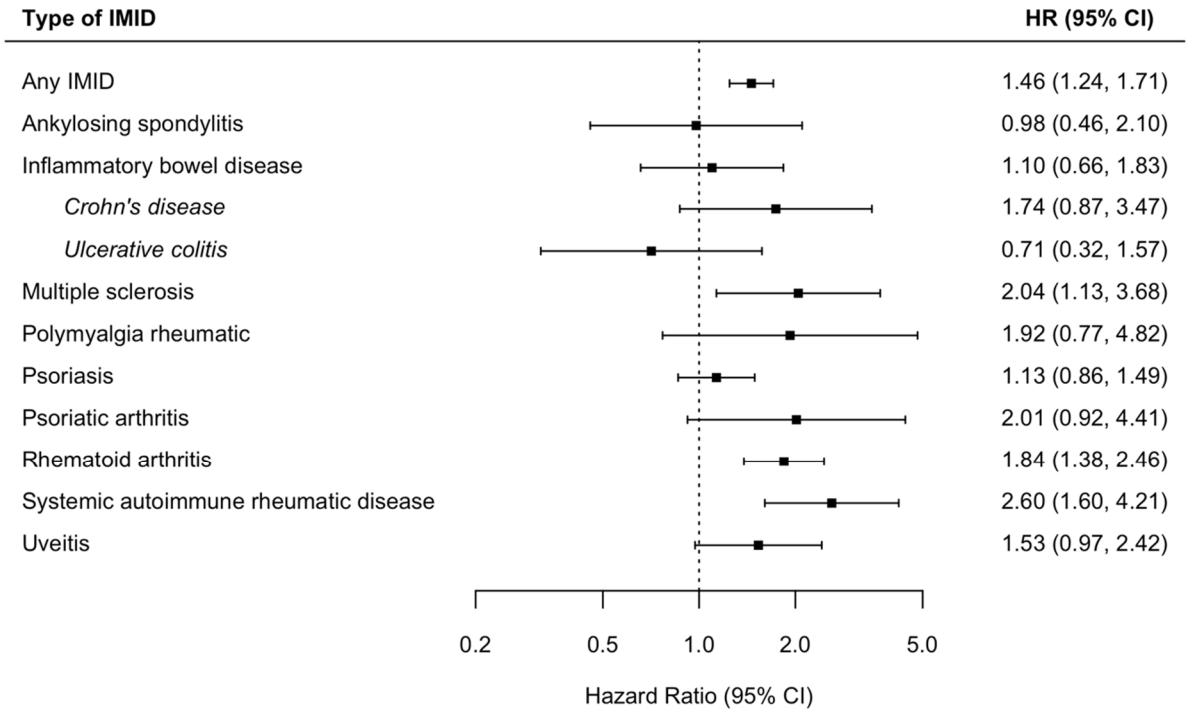
**eFigure 1. Forest plot depicting the unadjusted hazard ratio of venous thromboembolism among individuals with and without (reference) an immune-mediated inflammatory disease (IMID) following COVID-19 infection, stratified by type of IMID**

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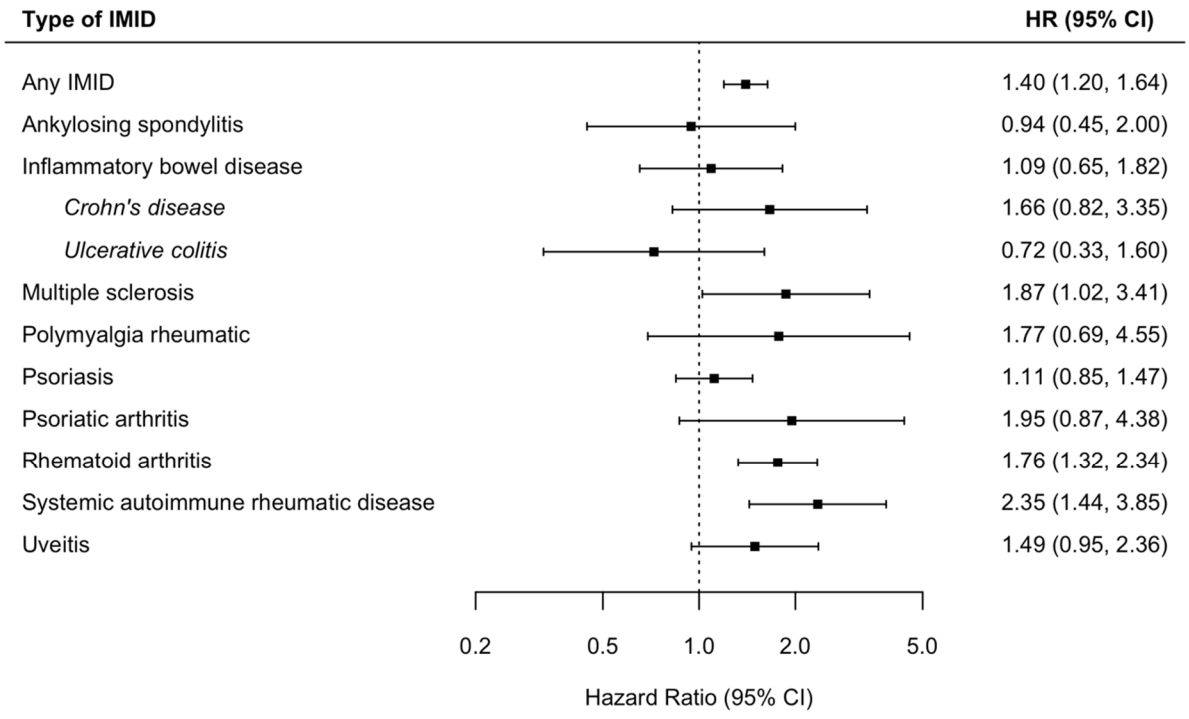
**eFigure 2. Forest plot depicting the hazard ratio of venous thromboembolism among individuals with and without (reference) an immune-mediated inflammatory disease (IMID) following COVID-19 infection, adjusted for previous VTE and COVID-19 vaccination stratified by type of IMID**

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