

Supplementary Table I.

Classification of immunomodulatory and immunosuppressive therapies in rheumatoid arthritis, with Anatomic Therapeutic Chemical Classification System (ATC) codes.

| Treatment | Rheumatoid arthritis |
|--|---|
| Corticosteroids | Methylprednisolone (H02AB04) Prednisolone (H02AB06) Prednisone (H02AB07) Triamcinolone (H02AB08) Cortisone (H02AB10) |
| Disease-modifying anti-rheumatic drugs | Sulfasalazine (A07EC01) Sodium aurothiomalate (M01CB01) Auranofin (M01CB03) Aurothioglucose (M01CB04) Penicillamine (M01CC01) Hydroxychloroquine (P01BA02) Cyclophosphamide (L01AA01) Methotrexate (L01BA01, L04AX03) Cyclosporine (L04AA01) Leflunomide (L04AA13) Azathioprine (L04AX01) |
| Novel immunosuppressive therapies/ Biologics | Infliximab (L04AA12) adalimumab (L04AA17) Etanercept (L04AA11) Anakinra (L04AA14) Rituximab (L01XC02) Abatacept (L04AA24) |

Supplementary Table II.

Diagnostic and procedure codes to identify joint related procedures.

| Procedure | ICD-9-CM code | CCI code |
|--|----------------------------|--|
| Hip replacement (incl. Partial, total, revisions) | 81.50, 81.51, 81.53, 81.52 | 1.VA.53.LA-PN^^ or 1.VA.53.PN-PN^^ 1.VA.53.LA-PM^^ or 1.VA.53.PN-PM^^ |
| Knee replacement | 81.54, 81.55 | 1.VG.53.LA-PN or 1.VG.53.LA-PP |
| Elbow replacement | 81.84 | 1.TM.80.^^ |
| Shoulder replacement | 81.80, 81.81, 81.83 | 1.TA.53. ^^ |
| Wrist fusion | 81.25, 81.26 | 1.UB.75. ^^, 1.UG.75. ^^ |
| Ankle fusion | 81.1 | 1.WA.75. ^^ |
| Foot joint fusion | 81.1 | 1.WE.75. ^^ |
| Foot joint replacement | 81.57 | 1.WJ.53. ^^ |
| Cervical spine fusion | 81.01, 81.02, 81.03 | 1.SA.75. ^^ |
| Hand joint replacement | 81.7 | 1.UC.53. ^^, 1.UC.55. ^^ |

Supplementary Table III.

Characteristics of the study populations included in post-intensive care unit analysis.

| Characteristic | General population controls (n=1168) | RA (n=416) | p-value |
|--|--|---------------|---------|
| Female, n (%) | 492 (42.1) | 157 (37.7) | 0.12 |
| Age at admission, mean (SD) | 68.8 (11.5) | 66.9 (12.7) | 0.0051 |
| Disease duration, mean (SD) | 6.02 (4.7) | 5.81 (4.7) | 0.42 |
| Region of residence, n (%) | | | |
| Urban | 742 (63.5) | 267 (64.2) | 0.81 |
| Socioeconomic status, n (%) | | | 0.51 |
| Quintile 1 (lowest) | 259 (22.2) | 87 (20.9) | |
| Quintile 2 | 264 (22.6) | 105 (25.2) | |
| Quintile 3 | 256 (21.9) | 94 (22.6) | |
| Quintile 4 | 219 (21.9) | 63 (15.1) | |
| Quintile 5 (highest) | 142 (18.7) | 58 (13.9) | |
| Not calculated* | 28 (2.4) | 9 (2.2) | |
| Modified Charlson Index, n (%) | | | |
| 0 | 267 (22.9) | 54 (13.0) | 0.0003 |
| 1 | 319 (27.3) | 131 (31.5) | |
| >1 to 3 | 582 (49.8) | 299 (55.5) | |
| Any hospitalisations in the year before admission, n (%) | 152 (36.5) | 349 (29.9) | |
| No. physician visits in year before admission, mean (SD) | 25.9 (23.3) | 31.1 (28.1) | 0.0002 |

*Could not be calculated for some individuals who lack a postal code, such as those living in personal care homes.

Supplementary Table IV.Multivariable association of rheumatoid arthritis *versus* general population with health care utilisation in the year after ICU admission.

| Outcome | Unadjusted | | Adjusted ^a | |
|---|------------|------------|-----------------------|------------|
| | OR/RR | 95%CI | OR/RR | 95% CI |
| Any hospitalisation* | 1.22 | 0.98, 1.53 | 1.01 | 0.80, 1.29 |
| Number of hospital days [‡] | 1.22 | 0.98, 1.52 | 1.14 | 0.91, 1.43 |
| Number of physician visits [‡] | 1.20 | 1.10, 1.31 | 1.04 | 0.96, 1.13 |

*adjusted for age, sex, region of residence, comorbidity, number of physician visits and any hospitalisations prior to ICU admission; [‡] socioeconomic status did not improve model fit and were not retained;

[‡]adjusted for age, sex, region of residence, comorbidity, any hospitalisations prior to ICU admission.