**Additional files**

**Table S1.** Sensitivity analyses of prevalence of cardiovascular disease risk factors across age strata in patients with rheumatoid arthritis, axial spondylitis and psoriatic arthritis

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **Inflammatory**  **joint disease (n=3517)** | **Rheumatoid arthritis**  **(n=1961)** | **Axial Spondyloarthritis**  **(n=835)** | **Psoriatic**  **arthritis**  **(n=721)** | **p** |
| Hypertension | Valid observations | 3514 (99.9) | 1959 (99.9) | 834 (99.9) | 721(100) | - |
| Any ages, n (%) | Percent  Valid percent | 1751 (49.8)  1751 (49.8) | 1003 (51.1)  1003 (51.2) | 348 (41.7)  348 (41.7) | 400 (55.5)  400 (55.5) | **<0.001** |
| Age 30<45 years, n (%) | Percent  Valid percent | 217 (28.0)  217 (28.0) | 57 (23.3)  57 (23.3) | 89 (26.3)  89 (26.3) | 71 (37.2)  71 (48.6) | **<0.001** |
| Age 45<60 years, n (%) | Percent  Valid percent | 699 (47.1)  699 (47.1) | 305 (41.8)  305 (41.9) | 182 (47.3)  182 (47.4) | 212 (57.1)  212 (57.1) | **<0.001** |
| Age 60-80 years, n (%) | Percent  Valid percent | 835 (66.4)  835 (66.4) | 641 (64.9)  641 (65.0) | 77 (68.8)  77 (68.8) | 117 (73.6)  117 (73.6) | 0.090 |
| Elevated total cholesterol | Valid observations | 3486 (99.1) | 1945 (99.2) | 828 (99.2) | 713 (98.9) | - |
| Any ages, n (%) | Percent  Valid percent | 1152 (32.8)  1152 (33.0) | 711 (36.3)  711 (36.6) | 221 (26.5)  221 (26.7) | 220 (30.5)  220 (30.9) | **<0.001** |
| Age 30<45 years, n (%) | Percent  Valid percent | 110 (14.2)  110 (14.4) | 29 (11.8)  29 (11.8) | 55 (16.3)  55 (16.5) | 26 (13.6)  26 (14.0) | 0.293 |
| Age 45<60 years, n (%) | Percent  Valid percent | 490 (33.0)  490 (33.2) | 243 (33.3)  243 (33.6) | 118 (30.6)  118 (30.7) | 129 (34.8)  129 (35.0) | 0.442 |
| Age 60-80 years, n (%) | Percent  Valid percent | 552 (43.9)  552 (44.3) | 439 (44.5)  439 (44.9) | 48 (42.9)  48 (43.6) | 65 (40.9)  65 (41.1) | 0.658 |
| Obesity | Valid observations | 3164 (90.0) | 1816 (92.6) | 739 (88.5) | 609 (84.5) | - |
| Any ages, n (%) | Percent  Valid percent | 613 (17.4)  613 (19.4) | 315 (16.1)  315 (17.3) | 133 (15.9)  133 (18.0) | 165 (22.9)  165 (27.1) | **<0.001** |
| Age 30<45 years, n (%) | Percent  Valid percent | 150 (19.4)  150 (21.8) | 49 (20.0)  49 (21.6) | 52 (15.4)  52 (17.4) | 49 (25.7)  49 (30.4) | **<0.001** |
| Age 45<60 years, n (%) | Percent  Valid percent | 269 (18.1)  269 (20.4) | 120 (16.5)  120 (17.9) | 63 (16.4)  63 (18.6) | 86 (23.2)  86 (28.0) | **<0.001** |
| Age 60-80 years, n (%) | Percent  Valid percent | 194 (15.4)  194 (16.7) | 146 (14.8)  146 (15.9) | 18 (16.1)  18 (17.8) | 30 (18.9)  30 (21.3) | 0.271 |
| Current smoking | Valid observations | 3472 (98.7) | 1938 (98.8) | 820 (98.2) | 714 (99.0) | - |
| Any ages, n (%) | Percent  Valid percent | 707 (20.1)  707 (20.4) | 419 (21.4)  419 (21.6) | 162 (19.4)  162 (19.8) | 126 (17.5)  126 (17.6) | 0.070 |
| Age 30<45 years, n (%) | Percent  Valid percent | 125 (16.1)  125 (16.3) | 39 (15.9)  39 (16.0) | 59 (17.5)  59 (17.6) | 27 (14.1)  27 (14.2) | 0.070 |
| Age 45<60 years, n (%) | Percent  Valid percent | 317 (21.3)  317 (21.6) | 161 (22.1)  161 (22.3) | 77 (20.0)  77 (20.4) | 79 (21.3)  79 (21.4) | 0.758 |
| Age 60-80 years, n (%) | Percent  Valid percent | 265 (21.1)  265 (21.5) | 219 (22.2)  219 (22.5) | 26 (23.2)  26 (24.3) | 20 (12.6)  20 (12.9) | **0.019** |
| Diabetes | Valid observations | 2815 (80.0) | 1626 (82.9) | 635 (76.0) | 554 (76.8) | - |
| Any ages, n (%) | Percent  Valid percent | 169 (4.8)  169 (6.0) | 98 (5.0)  98 (6.0) | 28 (3.4)  28 (4.4) | 43 (6.0)  43 (7.8) | 0.052 |
| Age 30<45 years, n (%) | Percent  Valid percent | 28 (3.6)  28 (4.3) | 13 (5.3)  13 (6.2) | 7 (2.1)  7 (2.5) | 8 (4.2)  8 (5.0) | 0.052 |
| Age 45<60 years, n (%) | Percent  Valid percent | 69 (4.6)  69 (6.1) | 33 (4.5)  33 (5.6) | 16 (4.2)  16 (5.7) | 20 (5.4)  20 (7.6) | 0.493 |
| Age 60-80 years, n (%) | Percent  Valid percent | 72 (5.7)  72 (7.0) | 52 (5.3)  52 (6.3) | 5 (4.5)  5 (6.4) | 15 (9.4)  15 (11.5)) | 0.098 |

*Percent: prevalence of cardiovascular risk factors among all included patients; Valid percent: prevalence of cardiovascular risk factors in patients with complete recording of the particular risk factor*

**Table S2.** Quantity of conventional cardiovascular risk factors

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Age** | **Number of**  **CVD-RFs** | **Inflammatory**  **joint disease**  **(n=3517)** | **Rheumatoid**  **arthritis**  **(n=1961)** | **Axial**  **spondyloarthritis (n=835)** | **Psoriatic**  **arthritis**  **(n=721)** | **p** |
| Any | Minimum 1, n (%) | 2587 (73.6) | 1492 (76.1) | 538 (64.4) | 557 (77.3) | **<0.001** |
| Minimum 2, n (%) | 1324 (37.4) | 776 (39.6) | 251 (30.1) | 287 (39.8) | **<0.001** |
| Minimum 3, n (%) | 416 (11.8) | 242 (12.3) | 84 (10.1) | 90 (12.5) | 0.191 |
| Minimum 4, n (%) | 56 (1.6) | 30 (1.5) | 11 (1.3) | 15 (2.1) | 0.457 |
| Five of five, n (%) | 5 (0.1) | 2 (0.1) | 1 (0.1) | 2 (0.3) | 0.412 |
| 30<45 years | Minimum 1, n (%) | 412 (53.2) | 126 (51.4) | 167 (49.4) | 119 (62.3) | **0.013** |
| Minimum 2, n (%) | 158 (20.4) | 45 (18.4) | 68 (20.1) | 45 (23.6) | 0.403 |
| Minimum 3, n (%) | 45 (5.8) | 13 (5.3) | 20 (5.9) | 12 (6.3) | 0.923 |
| Minimum 4, n (%) | 8 (1.0) | 3 (1.2) | 2 (0.6) | 3 (1.6) | 0.488 |
| Five of five, n (%) | 1 (0.1) | 0 (0) | 1 (0.3) | 0 (0) | 1.00 |
| 45<60 years | Minimum 1, n (%) | 1091 (73.5) | 518 (71.1) | 274 (71.2) | 299 (80.6) | **0.002** |
| Minimum 2, n (%) | 555 (37.4) | 257 (35.3) | 130 (33.8) | 168 (45.3) | **0.001** |
| Minimum 3, n (%) | 170 (11.4) | 77 (10.6) | 42 (10.9) | 51(13.7) | 0.270 |
| Minimum 4, n (%) | 20 (1.3) | 7 (1.0) | 7 (1.8) | 6 (1.6) | 0.391 |
| Five of five, n (%) | 2 (0.1) | 1 (0.1) | 0 (0) | 1 (0.3) | 0.745 |
| 60-80 years | Minimum 1, n (%) | 1084 (86.2) | 848 (85.9) | 97 (86.6) | 139 (87.4) | 0.855 |
| Minimum 2, n (%) | 601 (47.8) | 474 (48.0) | 53 (47.3) | 74 (46.5) | 0.933 |
| Minimum 3, n (%) | 201 (16.0) | 152 (15.4) | 22(19.6) | 27(17.0) | 0.481 |
| Minimum 4, n (%) | 28 (2.2) | 20 (2.0) | 2 (1.8) | 6 (3.8) | 0.364 |
| Five of five, n (%) | 2 (0.2) | 1 (0.1) | 0 (0) | 1 (0.6) | 0.385 |

*Numbers of cardiovascular risk factors across inflammatory joint disease entities and age strata. CVD-RFs: Cardiovascular disease risk factors.*

**Table S3.** Ten year risk of fatal cardiovascular disease events

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SCORE** | **IJD (mRA)**  **(n=2530)** | **IJD**  **(n=2530)** | **RA**  **(n=1354)** | **mRA**  **(n=1354)** | **axSpA**  **(n=646)** | **PsA**  **(n=530)** | **p**  **(RA)** | **p**  **(mRA)** |
| All ages |  |  |  |  |  |  | - | - |
| Numbers (valid observations) | 2410/2530 (95.3) | 2410/2530 (95.3) | 1293/1354 (95.5) | 1293/1354 (95.5) | 613/646  (94.9) | 504/530  (95.1) | - | - |
| SCORE, median (IQR) | 0.75  (0.30, 1.95) | 0.60  (0.20, 1.50) | 0.80  (0.20, 1.8) | 1.20  (0.30, 2.70) | 0.40  (0.20, 1.00) | 0.60  (0.20, 1.30) | **<0.001** | **<0.001** |
| Age 30<45 years |  |  |  |  |  |  | - | - |
| Numbers (valid observations) | 677/702  (96.4) | 677/702  (96.4) | 215/220  (97.7) | 215/220  (97.7) | 297/309  (96.1) | 165/173  (95.4) | - | - |
| SCORE, median (IQR) | 0.20  (0.0, 0.30) | 0.20  (0.00, 0.30) | 0.10  (0.00, 0.10) | 0.15  (0.00, 0.15) | 0.20  (0.10, 0.40) | 0.20  (0.10, 0.40) | **<0.001** | **<0.001** |
| Age 45<60 years |  |  |  |  |  |  | - | - |
| Numbers (valid observations) | 1073/1120 (95.8) | 1073/1120 (95.8) | 553/572  (96.7) | 553/572  (96.7) | 263/280  (93.9) | 257/268  (95.9) | - | - |
| SCORE, median (IQR) | 0.75  (0.30, 1.50) | 0.60  (0.30, 1.20) | 0.50  (0.20, 1.10) | 0.75  (0.30, 1.65) | 0.80  (0.40, 1.40) | 0.80  (0.30, 1.40) | **<0.001** | 0.866 |
| Age 60<80 years |  |  |  |  |  |  | - | - |
| Numbers (valid observations) | 660/708  (93.2) | 660/708  (93.2) | 525/562  (93.4) | 525/562  (93.4) | 53/57  (93.0) | 82/89  (92.1) | - | - |
| SCORE, median (IQR) | 2.70  (1.60, 4.65) | 2.00  (1.10, 3.40) | 1.90  (1.10, 3.30) | 2.85  (1.65, 4.95) | 2.30  (1.30, 4.25) | 2.30  (1.20, 3.93) | 0.121 | **0.006** |

*Ten year risk of fatal cardiovascular disease according to Systematic Coronary Risk Evaluation across age strata and inflammatory joint disease entities. SCORE: Systematic Coronary Risk Evaluation; IJD: inflammatory joint diseases, RA: rheumatoid arthritis; mRA: modified SCORE using the EULAR 1.5 multiplication factor on estimated risk in RA; axSpA: axial spondyloarthritis; PsA: psoriatic arthritis, IQR: Interquartile range*

**Table S4.** Cardiovascular risk categories

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **IJD (mRA)**  **(n=2530)** | **IJD**  **(n=2530)** | **RA**  **(n=1354)** | **mRA**  **(n=1354)** | **axSpA**  **(n=646)** | **PsA**  **(n=530)** |
| All ages |  |  |  |  |  |  |
| Numbers (valid observations) | 2410/2530  (95.3) | 2410/2530  (95.3) | 1293/1354  (95.5) | 1293/1354  (95.5) | 613/646  (94.9) | 504/530  (95.1) |
| Low-to-moderate risk (<5%), n (%) | 2253 (93.5) | 2332 (96.8) | 1235 (95.5) | 1156 (89.4) | 608 (99.2) | 489 (97.0) |
| High risk (5<10%) n (%) | 136 (5.6) | 73 (3.0) | 54 (4.2) | 117 (9.0) | 4 (0.7) | 15 (3.0) |
| Very high risk (>10%), n (%) | 21 (0.9) | 5 (0.2) | 4 (0.3) | 20 (1.5) | 1 (0.2) | 0 (0) |
| Reclassified, n (%) | - | - | - | 95 (7.3) | - | - |
| Age 30<45 |  |  |  |  |  |  |
| Numbers (valid observations) | 677/702  (96.4) | 677/702  (96.4) | 215/220  (97.7) | 215/220  (97.7) | 297/309  (96.1) | 165/173  (95.4) |
| Low-to-moderate risk (<5%), n (%) | 677 (100) | 677 (100) | 215 (100) | 215 (100) | 297 (100) | 165 (100) |
| High risk (5<10%), n (%) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) |
| Very high risk (>10%), n (%) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) |
| Reclassified, n (%) | - | - | - | 0 (0) | - | - |
| Age 45<60 |  |  |  |  |  |  |
| Numbers (valid observations) | 1073/1120  (95.8) | 1073/1120  (95.8) | 553/572  (96.7) | 553/572  (96.7) | 263/280  (93.9) | 257/268  (95.9) |
| Low-to-moderate risk (<5%), n (%) | 1060 (98.8) | 1068 (99.5) | 551 (99.6) | 543 (98.2) | 263 (100) | 254 (98.8) |
| High risk (5<10%), n (%) | 13 (1.2) | 5 (0.5) | 2 (0.4) | 10 (1.8) | 0 (0) | 3 (1.2) |
| Very high risk (>10%), n (%) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) |
| Reclassified, n (%) | - | - | - | 8 (1.4) | - | - |
| Age 60<80 |  |  |  |  |  |  |
| Numbers (valid observations) | 660/708  (93.2) | 660/708  (93.2) | 525/562  (93.4) | 525/562  (93.4) | 53/57  (93.0) | 82/89  (92.1) |
| Low-to-moderate risk (<5%), n (%) | 516 (78.2) | 587 (88.9) | 469 (89.3) | 398 (75.8) | 48 (90.6) | 70 (85.4) |
| High risk (5<10%), n (%) | 123 (18.6) | 68 (10.3) | 52 (9.9) | 107 (20.4) | 4 (7.5) | 12 (14.6) |
| Very high risk (>10%), n (%) | 21 (3.2) | 5 (0.8) | 4 (0.8) | 20 (3.8) | 1 (1.9) | 0 (0) |
| Reclassified, n (%) | - | - | - | 87 (16.6) | - | - |

*Ten year risk of fatal cardiovascular disease according to the Systematic Coronary Risk Evaluation. IJD: inflammatory joint diseases, RA: rheumatoid arthritis; mRA: modified SCORE using the EULAR 1.5 multiplication factor on estimated risk in RA; axSpA: axial spondyloarthritis; PsA: psoriatic arthritis.*

**Table S5**. Relative Risk in patients with inflammatory joint diseases

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Relative risk 1-12*** | ***IJD***  ***(n=2530)*** | ***RA***  ***(n=1354)*** | ***axSpA***  ***(n=646)*** | ***PsA***  ***(n=530)*** | ***p*** |
| Valid observations, n (%) | 2422 (95.7) | 1301 (96.1) | 616 (95.4) | 505 (95.3) | - |
| Relative risk, median (IQR) | 1 (1, 2) | 2 (1, 3) | 2 (1, 2) | 2 (1, 3) | **<0.001** |
| Relative risk= 1 | 972 (40.1) | 502 (38.6) | 291 (47.2) | 179 (35.8) | - |
| Relative risk= 2 | 852 (35.2) | 454 (34.9) | 204 (33.1) | 194 (38.4) | - |
| Relative risk= 3-12 | 598 (24.7) | 345 (26.5) | 121 (19.6) | 132 (26.1) | - |
| *Relative risk= 3* | *369 (15.2)* | *207 (15.9)* | *76 (12.3)* | *86 (17.0)* | *-* |
| *Relative risk= 4* | *128 (5.3)* | *73 (5.6)* | *26 (4.2)* | *29 (5.7)* | *-* |
| *Relative risk= 5* | *49 (2.0)* | *34 (2.6)* | *4 (0.6)* | *11 (2.2)* | *-* |
| *Relative risk= 6* | *26 (1.1)* | *14 (1.1)* | *10 (1.6)* | *2 (0.4)* | *-* |
| *Relative risk= 7* | *13 (0.5)* | *9 (0.7)* | *2 (0.3)* | *2 (0.4)* | *-* |
| *Relative risk= 8* | *11 (0.5)* | *6 (0.5)* | *3 (0.5)* | *2 (0.4)* | *-* |
| *Relative risk= 10* | *1 (0.0)* | *1 (0.1)* | *0 (0)* | *0 (0)* | *-* |
| *Relative risk= 12* | *1 (0.0)* | *1 (0.1)* | *0 (0)* | *0 (0)* | *-* |

*Relative risk: ratio comparing absolute risk in individuals compared to risk given optimal levels of cardiovascular risk factors in patients with inflammatory joint diseases (IJD), RA: rheumatoid arthritis, axSpA: axial spondyloarthritis, PsA: psoriatic arthritis, IQR: inter-quartile range.***Table S6*.*** *Data-availability of cardiovascular risk factors*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Observations of cardiovascular risk factors** | **IJD**  **(n=3517)** | **RA**  **(n=1961)** | **axSpA (n=835)** | **PsA**  **(n=721)** |
| **Hypertension** |  |  |  |  |
| *Self-reported HTN, AntiHT status, sBP and/or dBP level* | 3514 (99.9) | 1959 (99.9) | 834 (99.9) | 721 (100) |
| *Self-reported HTN, AntiHT status, sBP and dBP level* | 2201 (62.6) | 1262 (64.4) | 519 (62.2) | 420 (58.3) |
| *Status of self-reported HTN* | 2790 (79.3) | 1608 (82.0) | 633 (75.8) | 549 (76.1) |
| *AntiHT status* | 2717 (77.3) | 1458 (74.3) | 698 (83.6) | 561 (77.8) |
| *sBP level* | 3483 (99.0) | 1942 (99.0) | 825 (98.8) | 716 (99.3) |
| *dBP level* | 3482 (99.0) | 1943 (99.1) | 824 (98.7) | 715 (99.2) |
| **Elevated total cholesterol** |  |  |  |  |
| *Status of lipid-lowering therapy and/or total cholesterol* | 3486 (99.1) | 1945 (99.2) | 828 (99.2) | 713 (98.9) |
| *Status of lipid-lowering therapy and total cholesterol* | 2615 (74.4) | 1401 (71.4) | 675 (80.8) | 539 (74.8) |
| *Status of lipid-lowering therapy* | 2646 (75.2) | 1417 (72.3) | 682 (81.7) | 547 (75.9) |
| *Total cholesterol* | 3455 (98.2) | 1929 (98.4) | 821 (98.3) | 705 (97.8) |
| **Diabetes mellitus** |  |  |  |  |
| *Status of diabetes mellitus* | 2815 (80.0) | 1626 (82.9) | 635 (76.0) | 554 (76.8) |
| **Obesity** |  |  |  |  |
| *Body Mass Index* | 3164 (90.0) | 1816 (92.6) | 739 (88.5) | 609 (84.5) |
| **Current smoking** |  |  |  |  |
| *Status of current smoking* | 3472 (98.7) | 1938 (98.8) | 820 (98.2) | 714 (99.0) |

*Numbers and percent of available data on presence of hypertension, elevated total cholesterol, diabetes mellitus, obesity and current smoking. IJD: inflammatory joint disease; RA: rheumatoid arthritis; axSpA: axial spondyloarthritis; PsA: psoriatic arthritis; HTN: hypertension, AntiHT: antihypertensive treatment; sBP and dBP: systolic and diastolic blood pressure.*

**Table S7**. Patient characteristics and cardiovascular risk factors according to rheumatic disease activity

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **Rheumatoid arthritis**  **DAS28 disease activity** | |  | | **Axial spondyloarthritis**  **ASDAS disease activity** | |  | |
|  | **Remission/Low**  **(n=1185)** | **High/Very high**  **(n=468)** | | **p** | **Inactive/ Moderate**  **(n=401)** | **High/ Very high**  **(n=224)** | | **p** |
| Females, n (%) | 804 (67.8) | 362 (77.4) | | **<0.001** | 131 (32.7) | 83 (37.1) | | 0.268 |
| Age in years, mean +SD | 58.7+11.1 | 59.9+11.1 | | **0.043** | 47.4 +9.7 | 49.2+9.6 | | **0.021** |
| Age 30<45 years, n (%)  Age 45<60 years, n (%)  Age 60<80 years, n (%) | 153 (12.9)  446 (37.6)  586 (49.5) | 50 (10.7)  165 (35.3)  253 (54.1) | | -  -  - | 184 (45.9)  170 (42.4)  47 (11.7) | 79 (35.3)  112 (50.0)  33 (14.7) | | -  -  - |
| Working/student, n (%) | 539 (47.1) | 149 (32.7) | | **<0.001** | 301 (77.4) | 118 (54.4) | | **<0.001** |
| Education in years, mean+SD | 12.4+3.3 | 12.3+3.3 | | 0.323 | 14.2+3.1 | 13.1+3.0 | | **<0.001** |
| **Cardiovascular risk factor levels** |  |  | |  |  |  | |  |
| Total cholesterol (mmol/l), mean+SD | 5.41+1.06 | 5.39+1.14 | | 0.783 | 5.25+1.03 | 5.27+1.08 | | 0.818 |
| Triglycerides (mmol/l), median (IQR) | 1.25 (0.91, 1.74) | 1.24 (0.96, 1.76) | | 0.565 | 1.28 (0.89, 1.88) | 1.40 (1.00, 2.06) | | **0.038** |
| Low density lipoprotein (mmol/l), mean+SD | 3.30+0.95 | 3.23+1.03 | | 0.211 | 3.17+0.96 | 3.34+0.92 | | **0.039** |
| High density lipoprotein (mmol/l), mean+SD | 1.64+0.52 | 1.64+0.52 | | 0.931 | 1.49+0.48 | 1.40+0.41 | | **0.024** |
| Body mass index (kg/m2), mean+SD | 26.05+4.40 | 25.99+4.69 | | 0.811 | 26.2+4.2 | 26.6+4.4 | | 0.308 |
| Systolic blood pressure (mmHg), mean+SD | 131.6+17.3 | 133.0+17.5 | | 0.154 | 128.5+15.8 | 130.9+18.2 | | 0.094 |
| Diastolic blood pressure (mmHg), mean+SD | 79.7+9.2 | 80.5+9.2 | | 0.090 | 80.2+9.6 | 81.1+10.5 | | 0.293 |
| **Prevalence of cardiovascular risk factors** |  |  | |  |  |  | |  |
| Elevated total cholesterol, n (%) | 422 (35.6) | 182 (38.9) | | 0.408 | 102 (25.4) | 57 (25.4) | | 0.767 |
| Hypertension, n (%) | 581 (49.0) | 256 (54.7) | | **0.038** | 149 (37.2) | 108 (48.2) | | **0.007** |
| Obesity, n (%) | 178 (16.1) | 86 (19.2) | | 0.139 | 59 (16.3) | 42 (22.2) | | 0.088 |
| Current smoking, n (%) | 260 (22.1) | 97 (20.9) | | 0.575 | 67 (16.9) | 53 (24.7) | | **0.026** |
| Diabetes, n (%) | 66 (6.3) | 22 (5.6) | | 0.656 | 13 (3.7) | 11 (6.6) | | 0.135 |
| **Rheumatic disease related variables** |  |  | |  |  |  | |  |
| Rheumatoid Factor+, n (%)  Anti-citrullinated protein antibody+, n (%) | 490 (68.2)  635 (78.6) | 201 (63.8)  273 (76.0) | | 0.172  0.334 | -  - | -  - | | -  - |
| Human leukocyte antigen B27+, n (%) | - | - | | - | 246 (90.8) | 98 (79.0) | | <0.001 |
| Disease duration (years), median (IQR) | 8.0 (4.0, 14.3) | 8.6 (3.3, 16.3) | | 0.530 | 10.3 (4.1, 20.5) | 10.0 (3.4, 22.1) | | 0.940 |
| ESR (mm/h), median (IQR) | 8 (4, 15) | 19 (12, 30) | | **<0.001** | 6 (3, 11) | 9 (4, 21) | | **<0.001** |
| CRP (mg/l), median (IQR) | 2 (1, 5) | 5 (2, 11) | | **<0.001** | 1 (1, 3) | 5 (3, 10) | | **<0.001** |
| **Antirheumatic medication, current use** |  |  | |  |  |  | |  |
| Glucocorticoids, n (%) | 337 (28.4) | 151 (32.3) | | 0.124 | 8 (2.0) | 3 (1.3) | | 0.550 |
| Methotrexate, n (%) | 725 (61.2) | 224 (47.9) | | **<0.001** | 28 (7.0) | 14 (6.3) | | 0.726 |
| Other sDMARDs, n (%) | 908 (76.6) | 334 (71.4) | | **0.026** | 43 (10.7) | 25 (11.2) | | 0.866 |
| bDMARDs, n (%) | 515 (43.5) | 189 (40.4) | | 0.255 | 282 (70.3) | 128 (57.1) | | **<0.001** |

*Patient characteristics and cardiovascular risk factors according to status of rheumatic disease activity. DAS28: Disease activity score using 28 joint count; ASDAS: Ankylosing spondylitis disease activity score; SD: standard deviation; ESR: erythrocyte sedimentation rate; CRP: C-reactive protein; sDMARDs and bDMARDs: synthetic and biologic disease-modifying antirheumatic drugs.*

**Table S8.** Characteristics of rheumatoid arthritis patients according to rheumatoid factor and anti-citrullinated protein antibody positivity

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **ACPA+**  **(n=1066)** | **ACPA-**  **(n=313)** | **p** | **RF+**  **(n=787)** | **RF-**  **(n=397)** | **p** |
| Females, n (%) | 757 (71.0) | 220 (70.3) | 0.804 | 554 (70.4) | 278 (70.0) | 0.896 |
| Age in years, mean+SD | 58.2+11.2 | 58.8+11.4 | 0.403 | 58.8+11.4 | 58.5+11.4 | 0.659 |
| Age 30<45 years, n (%)  Age 45<60 years, n (%)  Age 60<80 years, n (%) | 148 (13.9)  412 (38.6)  506 (47.5) | 38 (12.1)  114 (36.4)  161 (51.4) | -  -  - | 106 (13.5)  280 (35.6)  401 (51.0) | 53 (13.4)  148 (37.3)  196 (49.4) | -  -  - |
| Working/student, n (%) | 464 (46.0) | 126 (41.6) | 0.172 | 326 (43.5) | 171 (45.0) | 0.624 |
| Education in years, mean+SD | 12.4+3.4 | 12.6+3.3 | 0.452 | 12.3+3.4 | 12.7+3.3 | 0.089 |
| **CVD risk factor levels** |  |  |  |  |  |  |
| Total cholesterol (mmol/l), mean+SD | 5.36+1.10 | 5.55+1.13 | **0.008** | 5.39+1.12 | 5.41+1.11 | 0.780 |
| Triglycerides (mmol/l), median (IQR) | 1.20 (0.91, 1.70) | 1.30 (0.92, 1.79) | 0.179 | 1.21 (0.93, 1.71) | 1.26 (0.90, 1.74) | 0.930 |
| LDL-c (mmol/l), mean+SD | 3.25+0.98 | 3.37+1.02 | 0.054 | 3.26+0.99 | 3.26+0.99 | 0.947 |
| HDL-c (mmol/l), mean+SD | 1.64+0.50 | 1.72+0.59 | **0.014** | 1.65+0.52 | 1.69+0.54 | 0.159 |
| Body mass index (kg/m2), mean+SD | 26.1+4.5 | 26.5+4.7 | 0.160 | 25.9+4.3 | 26.4+4.8 | 0.088 |
| Systolic BP (mmHg), mean+SD | 131.1+17.0 | 137.4+19.2 | **<0.001** | 131.8+17.8 | 134.4+18.2 | **0.018** |
| Diastolic BP (mmHg), mean+SD | 79.9+9.3 | 82.4+8.6 | **<0.001** | 80.0+9.5 | 81.1+8.6 | 0.052 |
| **Prevalence of CVD risk factor** |  |  |  |  |  |  |
| Elevated total cholesterol, n (%) | 374 (35.1) | 131 (41.9) | 0.090 | 279 (35.5) | 167 (42.1) | 0.036 |
| Hypertension, n (%) | 509 (47.8) | 191 (61.0) | **<0.001** | 382 (48.6) | 211 (53.1) | 0.140 |
| Obesity, n (%) | 171 (17.3) | 65 (21.6) | 0.088 | 122 (16.2) | 75 (19.6) | 0.158 |
| Current smoking, n (%) | 238 (22.6) | 41 (13.3) | **<0.001** | 176 (22.5) | 59 (15.1) | **0.003** |
| Diabetes, n (%) | 49 (5.6) | 16 (6.5) | 0.622 | 37 (5.6) | 25 (7.5) | 0.228 |
| **Rheumatic disease related variables** |  |  |  |  |  |  |
| Disease duration (years), median (IQR) | 7.0 (3.2, 13.7) | 6.6 (3.2, 15.5) | 0.631 | 7.2 (3.6, 14.1) | 6.3 (3.0, 12.9) | 0.099 |
| ESR (mm/h), median (IQR) | 12 (6, 19) | 10 (5, 19) | 0.397 | 12 (7, 20) | 10 (5, 18) | **0.006** |
| CRP (mg/l), median (IQR) | 3 (1, 6) | 3 (1, 6) | 0.528 | 2 (1, 6) | 2 (1, 6) | 0.856 |
| DAS28 (ESR), mean+SD | 2.65+1.25 | 2.73+1.23 | 0.377 | 2.66+1.23 | 2.66+1.23 | 0.891 |
| Remission (<2.6), n (%) | 485 (53.4) | 129 (49.8) | - | 376 (54.4) | 178 (51.9) | - |
| Low disease activity (2.6<3.2), n (%) | 150 (16.5) | 44 (17.0) | - | 114 (16.5) | 51 (14.9) | - |
| Moderate disease activity (3.2<5.1), n (%) | 237 (26.1) | 72 (27.8) | - | 177 (25.6) | 98 (28.6) | - |
| High disease activity (>5.1), n (%) | 36 (4.0) | 14 (5.4) | - | 24 (3.5) | 16 (4.7) | - |
| **Antirheumatic medication, current use** |  |  |  |  |  |  |
| Glucocorticoids, n (%) | 321 (30.1) | 104 (33.2) | 0.294 | 235 (29.9) | 116 (29.2) | 0.820 |
| Methotrexate, n (%) | 600 (56.3) | 145 (46.3) | **0.002** | 445 (56.5) | 207 (52.1) | 0.150 |
| Other sDMARDs, n (%) | 792 (74.3) | 213 (68.1) | **0.029** | 593 (75.3) | 272 (68.5) | **0.012** |
| bDMARDs, n (%) | 495 (46.4) | 105 (33.5) | **<0.001** | 358 (45.5) | 149 (37.5) | **0.009** |

*Patient characteristics and cardiovascular risk factors according to status of anti-citrullinated protein antibody and rheumatoid factor. ACPA: anti-citrullinated protein antibody; RF: rheumatoid factor; SD: standard deviation; LDL-c: low density lipoprotein-cholesterol; HDL-c: high density lipoprotein-cholesterol; BP: blood pressure; ESR: erythrocyte sedimentation rate; CRP: C-reactive protein; DAS28: Disease activity score using 28 joint count; sDMARDs: synthetic disease modifying antirheumatic drugs; bDMARDs: biologic disease modifying antirheumatic drugs.*

**Table S9.** Patient characteristics and cardiovascular risk factors according to current use of biologics

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **IJD (n=3517)** | | **RA (n=1961)** | | **axSpA (n=835)** | | **PsA (n=721)** | |
|  | **Users**  **(n=1750)** | **Non-users (n=1767)** | **Users**  **(n=848)** | **Non-users (n=1113)** | **Users**  **(n=518)** | **Non-users (n=317)** | **Users**  **(n=384)** | **Non-users (n=337)** |
| Females, n (%) | 953 (54.5) | 1093 (61.9) | 622 (73.3) | 767 (68.9) | 157 (30.3) | 136 (42.9) | 174 (45.3) | 190 (56.4) |
| Age in years, mean +SD | 53.4+11.3 | 56.8+11.5 | 57.8+11.0 | 60.0+11.3 | 47.3+9.4 | 50.2+9.6 | 51.8+10.2 | 52.2+9.7 |
| Working/student, n (%) | 926 (56.4) | 829 (48.6) | 365 (46.3) | 441 (40.5) | 342 (69.5) | 201 (66.6) | 219 (60.7) | 187 (59.0) |
| Education in years, mean+SD | 13.4+3.3 | 12.4+3.2 | 13.0+3.4 | 12.0+3.2 | 14.0+3.1 | 13.4+3.0 | 13.5+3.0 | 13.0+3.1 |
| **CVD risk factor levels** |  |  |  |  |  |  |  |  |
| Total cholesterol (mmol/l), mean+SD | 5.36+1.08 | 5.38+1.07 | 5.33+1.07 | 5.42+1.10 | 5.32+1.06 | 5.25+1.03 | 5.47+1.11 | 5.34+1.02 |
| Triglycerides (mmol/l), median (IQR) | 1.30  (0.95, 1.88) | 1.29  (0.94, 1.82) | 1.20  (0.90, 1.66) | 1.27  (0.95, 1.80) | 1.32  (0.94, 1.92) | 1.40  (0.90, 1.93) | 1.54  (1.06, 2.35) | 1.29  (0.94, 1.82) |
| LDL-c (mmol/l), mean+SD | 3.24+0.97 | 3.34+0.97 | 3.19+0.97 | 3.32+0.98 | 3.26+0.96 | 3.32+0.96 | 3.32+0.99 | 3.42+0.94 |
| HDL-c (mmol/l), mean+SD | 1.54+0.52 | 1.58+0.50 | 1.65+0.53 | 1.63+0.52 | 1.45+0.48 | 1.49+0.46 | 1.44+0.49 | 1.47+0.43 |
| Body mass index (kg/m2), mean+SD | 26.5+4.7 | 26.5+4.5 | 25.9+4.5 | 26.2+4.5 | 26.6+4.5 | 26.0+4.0 | 27.9+4.9 | 28.1+4.9 |
| Systolic BP, mean+SD | 130.6+16.5 | 133.3+17.6 | 130.2+16.2 | 133.7+18.0 | 129.6+16.6 | 130.3+16.9 | 133.1+17.0 | 134.9+16.7 |
| Diastolic BP, mean+SD | 80.8+9.4 | 80.6+9.6 | 79.8+8.9 | 80.1+9.4 | 81.1+9.9 | 80.5+10.5 | 82.5+9.4 | 82.4+9.4 |
| **Prevalence of CVD risk factors** |  |  |  |  |  |  |  |  |
| Elevated total cholesterol, n (%) | 551 (31.5) | 601 (34.0) | 285 (33.6) | 426 (38.3) | 141 (27.2) | 80 (25.2) | 125 (32.6) | 95 (28.2) |
| Hypertension, n (%) | 824 (47.1) | 927 (52.6) | 401 (47.3) | 602 (54.1) | 210 (40.5) | 138 (43.7) | 213 (55.5) | 187 (55.5) |
| Obesity, n (%) | 306 (20.4) | 307 (18.4) | 128 (17.0) | 187 (17.6) | 93 (20.8) | 40 (13.7) | 85 (28.5) | 80 (25.7) |
| Current smoking, n (%) | 319 (18.2) | 388 (22.1) | 162 (19.4) | 257 (23.3) | 95 (18.8) | 67 (21.3) | 62 (16.4) | 64 (19.0) |
| Diabetes, n (%) | 93 (6.4) | 76 (5.6) | 42 (6.0) | 56 (6.1) | 22 (5.2) | 6 (2.8) | 29 (9.0) | 14 (6.0) |
| **Rheumatic disease related variables** |  |  |  |  |  |  |  |  |
| RF+, n (%)  ACPA+, n (%) | -  - | -  - | 358 (70.6)  495 (82.5) | 429 (63.4)  571 (73.3) | -  - | -  - | -  - | -  - |
| HLA-B27+, n (%) | - | - | - | - | 307 (89.0) | 138 (78.9) | - | - |
| Disease duration (years), median (IQR) | 10.5  (5.3, 19.1) | 6.9  (2.6, 13.5) | 10.9  (6.4, 18.4) | 6.6  (2.6, 11.8) | 10.8  (4.1, 21.3) | 9.6  (3.3, 20.6) | 9.0  (4.6, 17.3) | 5.8  (1.7, 11.8) |
| ESR (mm/h), median (IQR) | 8 (4, 17) | 10 (5, 18) | 10 (5, 19) | 11 (6, 19) | 6 (3, 15) | 8 (4, 16) | 7 (4, 15) | 9 (5, 16) |
| CRP (mg/l), median (IQR) | 3 (1, 5) | 3 (1, 6) | 2 (1, 5) | 3 (1, 6) | 3 (1, 5) | 3 (2, 5) | 3 (1, 5) | 3 (2, 5) |
| DAS28 (ESR), mean+SD | - | - | 2.54+1.22 | 2.63+1.26 | - | - | - | - |
| ASDAS (CRP), median (IQR) | - | - | - | - | 1.45  (0.95, 2.44) | 1.91  (1.24, 2.77) | 1.47  (0.96, 2.23) | 1.59  (1.09, 2.54) |
| BASDAI, median (IQR) | - | - | - | - | 0.72  (0.18, 3.63) | 2.03  (0.69, 4.81) | - | - |

*Patient characteristics and cardiovascular risk factors according to current use of biologics. IJD: inflammatory joint diseases, RA: rheumatoid arthritis; axSpA: axial spondyloarthritis; PsA: psoriatic arthritis; SD: standard deviation; LDL-c: low density lipoprotein-cholesterol; HDL-c: high density lipoprotein-cholesterol; BP: blood pressure; RF: rheumatoid factor; ACPA: anti-citrullinated protein antibody; HLA-B27: human leukocyte antigen B27; ESR: erythrocyte sedimentation rate; CRP: C-reactive protein; DAS28: Disease activity score using 28 joint count; ASDAS: Ankylosing spondylitis disease activity score; BASDAI: Bath ankylosing spondylitis disease activity index.*