

Supplementary data

Supplementary Table S1. Definitions of PsA cases, RA comparator-subjects and comorbidities

| Case and comparator definitions | |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PsA ¹ | ICD10: L40.5, M07.0, M07.1, M07.3 ICD9: 696A ICD8: 696.00 |
| RA | ICD10: M05.0, M05.1, M05.2, M05.3, M05.8, M05.9, M06.0, M06.2, M06.3, M06.8, M06.9, M12.3 ICD9: 714A, 714B, 714C, 714W, 719D ICD8: 712.10, 712.20, 712.38, 712.39 |
| axSpA | ICD10: M45, M460, M461, M468, M469, M072 ¹ , M081 ICD9: 720A, 720B, 720C, 720W, 720X ICD8: 712.40, 713.10, 713.11, 713.12, 713.19, 726.99 |
| Comorbidity definitions – main or secondary diagnoses from any department. | |
| Depression/anxiety | Prescription within 1 year before baseline, ACT-codes: N06A, N05AN |
| Diabetes | Diagnosis within 5 years before baseline, ICD10-codes: E10-E14, O24 Prescription of anti-diabetics within 1 year before baseline, ACT-code: A10 |
| Cancer | Diagnosis within 5 years before baseline, ICD10-codes: Any tumor: C00-C75, Metastatic solid tumor: C76-80, Lymphoma: C81-C85, C88, C90, C96, Leukemia: C91-C95 |
| Congestive heart disease | Diagnosis within 5 years before baseline, ICD10-codes: I11.0, I13.0, I13.2, I50 |
| Chronic lung disease | Diagnosis within 5 years before baseline, ICD10-codes: J41-J44, J84.1, J84.9 |
| Myocardial infarction | Diagnosis within 5 years before baseline, ICD10-codes: I20.0, I21, I22 |
| 1) M072 was not included in the PsA case definition, but actively excluded to avoid PsA patients with a dominant axial phenotype. | |

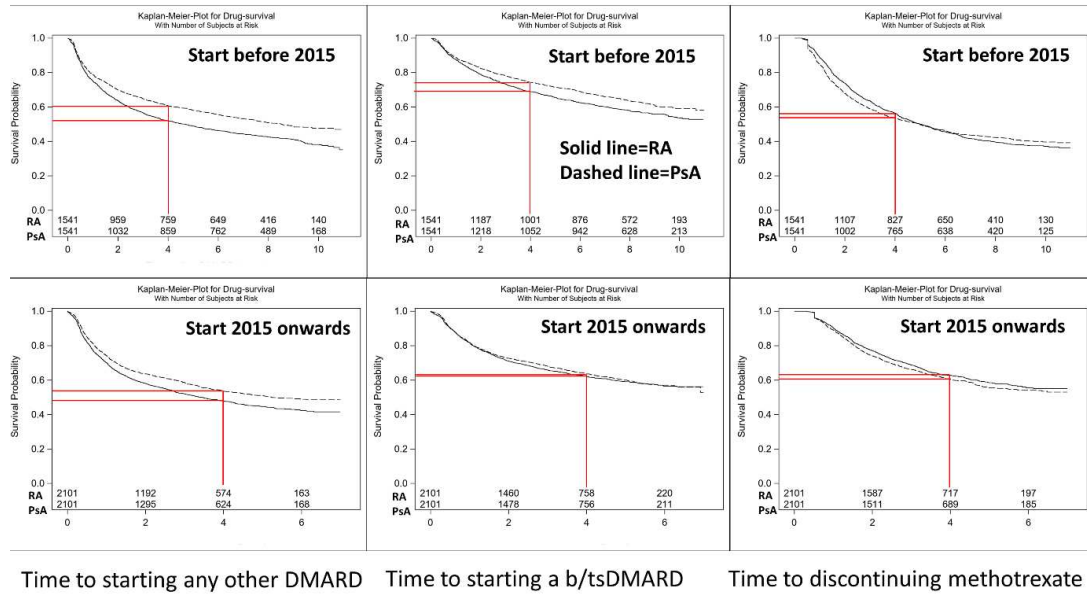
Supplementary Table S2. Comparison of matched and non-matched PsA cases (= the PsA cases for whom no suitable RA match could be found).

| Baseline | PsA matched | PsA non-matched |
|-------------------------------------------------------------------------|---------------|-----------------|
| | N=3642 | N=283 |
| Index year, median | 2015 | 2016 |
| Age, mean (sd) | 54.2 (14.1) | 35.9 (10.1) |
| Sex, N (%) men | 1813 (50) | 277 (98) |
| Days from first PsA/RA diagnosis to start of methotrexate, median (IQR) | 5 (46) | 6 (63) |
| Education | | |
| <10, N (%) | 704 (19) | 33 (12) |
| 10 to 12, N (%) | 1890 (52) | 153 (54) |
| >12, N (%) | 1040 (29) | 87 (31) |
| Diabetes, N (%) | 255 (7.0) | 9 (3.2) |
| Chronic lung disease, N (%) | 50 (1.4) | 1 (0.4) |
| Myocardial infarction, N (%) | 58 (1.6) | 0 |
| Cancer, N (%) | 178 (4.9) | 0 |
| Congestive heart disease, N (%) | 7 (0.2) | 1 (0.4) |
| Depression/anxiety, N (%) | 562 (15.4) | 30 (10.6) |
| DAS28-CRP, mean (sd) | 4.2 (1.3) | 3.9 (0.9) |
| DAS28, mean (sd) | 4.1 (1.1) | 3.9 (1.1) |
| Patient-reported pain, mean (sd) | 53 (23) | 50 (21) |
| Patient-reported global health, mean (sd) | 51 (24) | 51 (20) |
| Evaluator's assessment of disease activity | | |
| Remission, N (%) | 7 (1) | 0 |
| Low, N (%) | 221 (19) | 18 (19) |
| Moderate, N (%) | 720 (63) | 66 (69) |
| High, N (%) | 195 (17) | 12 (13) |
| Maximal, N(%) | 7 (1) | 0 |
| CRP, median (IQR) | 7 (15) | 10 (18) |
| Swollen 28-joint count, mean (sd) | 4.2 (4.3) | 3.2 (3.1) |
| Tender 28-joint count, mean (sd) | 5.3 (5.1) | 4.3 (3.8) |

Supplementary Table S3. Probability of not having started another DMARD and not having stopped methotrexate therapy, at one and two years after methotrexate initiation, calculated by taking censoring into account (i.e. survival distribution estimates). Numbers of patients included in the analyses, PsA/RA: 3642/3642.

| | | Survival distribution estimates (95%CI) | |
|----------------------------------------------------|------------|-----------------------------------------|------------------------------------------|
| | | At one year after start of methotrexate | At two years after start of methotrexate |
| Not having started any other DMARD | PsA | 0.76 (0.75-0.78) | 0.66 (0.65-0.68) |
| | RA | 0.72 (0.71-0.74) | 0.60 (0.59-0.62) |
| Not having started specifically a b/tsDMARD | PsA | 0.85 (0.84-0.86) | 0.77 (0.75-0.78) |
| | RA | 0.84 (0.83-0.85) | 0.74 (0.73-0.76) |
| Not having stopped methotrexate | PsA | 0.87 (0.86-0.88) | 0.71 (0.70-0.73) |
| | RA | 0.90 (0.89-0.91) | 0.76 (0.74-0.77) |

Supplementary Figure S1. Follow-up stratified by calendar time at median start year (2015) for methotrexate.



Supplementary Table S4. Comparison of baseline characteristics of the subsets of patients included in the response analyses and the whole cohort.

| Baseline | All matched cases/comparator-subjects | | Only PsA/RA with a MTX start date and baseline visit in SRQ | |
|-------------------------------------------------------------------------|---------------------------------------|-------------|-------------------------------------------------------------|-------------|
| | PsA=3642 | RA=3642 | PsA=1174 | RA=2135 |
| Index year, median | 2015 | 2015 | 2016 | 2015 |
| Age, mean (sd) | 54.2 (14.1) | 54.5 (14.4) | 53.7 (14.1) | 54.4 (14.5) |
| Sex, N (%) men | 1813 (50) | 1813 (50) | 598 (51) | 1065 (50) |
| Days from first PsA/RA diagnosis to start of methotrexate, median (IQR) | 5 (46) | 1 (15) | 3 (37) | 1 (12) |
| Education | | | | |
| <10, N (%) | 704 (19) | 837 (23) | 209 (18) | 477 (22) |
| 10 to 12, N (%) | 1890 (52) | 1765 (48) | 596 (51) | 1033 (48) |
| >12, N (%) | 1040 (29) | 1025 (28) | 367 (31) | 621 (29) |
| missing, N | 8 (0) | 15 (0) | 2 (0) | 4 (0) |
| Diabetes, N (%) | 255 (7.0) | 265 (7.3) | 77 (6.6) | 132 (6.2) |
| Chronic lung disease, N (%) | 50 (1.4) | 78 (2.1) | 16 (1.4) | 38 (1.8) |
| Myocardial infarction, N (%) | 58 (1.6) | 59 (1.6) | 18 (1.5) | 36 (1.7) |
| Cancer, N (%) | 178 (4.9) | 178 (4.9) | 58 (4.9) | 103 (4.8) |
| Congestive heart disease, N (%) | 7 (0.2) | 9 (0.3) | 1 (0.1) | 5 (0.2) |
| Depression, N (%) | 562 (15.4) | 441 (12.1) | 185 (15.8) | 243 (11.4) |