**Supplemental Table S3.** *Detailed study characteristics*

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| **Study** | **Reported design** | **Patients, n**Pso-PsAPsA | **Origin;****Center; Department / study setting** a) | **PsA classification** | **Duration disease** (y) | **Objective(s)** | **Therapy**(% Pso-PsA / PsA) | **Assessor psoriasis severity** | **Psoriasis severity****stratification** |
| **PASI** |  |  |  |  |  |  |  |  |  |
| Choi2017 | Cross-sectional | 17327 | S-Korea; Seoul National University Bundang Hospital; Dermatology | CASPAR | PsoriasisPso-PsA 8.7 ± 10.0PsA 9.8 ± 9.6 | (i) Investigate prevalence of undiagnosed PsA in cohort of Pso-PsA patients, (ii) Study association PsA with psoriasis severity and other medical conditions  | Topical (100 / 100), photo (50 / 52), systemic (28 / 30; of which biologics 3 / 0) | Cross-sectional by 1 highly experienced dermatologist | -<10: mild-10-20: moderate ->20: severe |
| Cinar2015 | Cross-sectional | 9432 | Turkey; Ankara Numune Training and Research Hospital; Dermatology | CASPAR | PsoriasisPso-PsA 121.9 mo ± 97.7PsA 205.4 mo ± 199.4 | (i) Investigate prevalence of undiagnosed PsA in a cohort of Pso-PsA patients, (ii) Compare clinical and laboratory characteristics  | Not specified | Cross-sectional by 1 dermatologist | -<3: mild-3-15: moderate ->15: severe |
| Dağdelen2020 | Case-control | 8040 | Turkey; Istanbul Medeniyet University; Dermatology & Rheumatology | CASPAR | PsoriasisPso-PsA 13.8 ± 13.0PsA 17.0 ± 15.2PsA8.2 ± 7.1 | Assess prevalence om metabolic syndrome in patients with PsA, Pso-PsA vs. HC | No systemic treatment <1 mo | Cross-sectional, assessor not specified | n.a.  |
| Eder2011 | Case-control | 159159 | Canada; University of Toronto PsA and psoriasis cohorts; Dermatology & Rheumatology | CASPAR | PsoriasisPso-PsA 18.6 ± 14.5PsA 17.2 ± 13PsA3.1 ± 2.2 | Investigate association environmental exposure with development PsA in patients with psoriasis | MTX (3 / 14), biologics (1 / 6) | During FU, assessor not specified (data from cohort database) | Highest during first 3y FU:-<10: non-severe -≥10: severe |
| El Miedany2014 | Prospective case-control (FU 1 y) | 112126 | Egypt; center not specified; Early inflammatory arthritis clinic for MSK symptoms | CASPAR | PsoriasisPso-PsA 4.6 ± 3.6PsA 4.8 ± 3.1PsA4.3 ± 1.6(at baseline) | (i) Identify predictors of arthritis in Pso-PsA patients(ii) Evaluate US as predictor for structural progression  | No systemic treatment <3 mo | At baseline, assessor not specified | n.a. |
| Gladman2011 | Observational cohort | 4381066 | Canada; University of Toronto PsA and psoriasis cohort; Dermatology & Rheumatology | Modified Moll & Wright criteria | PsoriasisPso-PsA 16.1 ± 14.1PsA 15.2 ± 12.3PsA7.1 ± 8.3(at baseline) | Describe PsA disease manifestations, course and prognosis  | Not specified | At entry in cohort, assessor not specified | n.a. |
| Haroon2013 | Cross-sectional | 7129 | Ireland; St. Vincent’s University Hospital; Dermatology & Rheumatology | CASPAR | PsoriasisPso-PsA 28.82 ± 14.29PsA 29.10 ± 15.08 | (i) Assess prevalence of undiagnosed PsA among Pso-PsA patients(ii) Identify predictors of PsA,(iii) compare performance of PsA screening tools | TNFi (41 / 34), fumaric acid (34 / 38), photo (13 / 10), UST (3 / 3), ciclosporin (3 / 0) | Cross-sectional, assessor not specified | n.a. |
| Henes2013 | Cross-sectional | 4850 | Germany; University hospital Tuebingen; Dermatology | CASPAR | PsoriasisPso-PsA 16 (IQR 1-57)PsA 19.5 (IQR 1-56) | Assess prevalence of PsA among patients with psoriasis, that have suspected PsA based on the GEPARD screening tool | Pooled: TNFi (4), MTX (18) | Cross-sectional, one physician | -0–1: not active-2–10: mild-11–15: moderate->15: severe |
| Jamshidi2008 | Cross-sectional | 29129 | Iran; Razi HospitalTehran; Dermatology | Moll & Wright criteria | PsoriasisPso-PsA 10.6PsA 10.2 | Assess prevalence of undiagnosed PsA among Pso-PsA patients | Not specified | Cross-sectional, a dermatologist | n.a. |
| Leijten2017 | Cross-sectional | 6818 | The Netherlands; University Medical Center Utrecht; Dermatology | CASPAR | PsoriasisPso-PsA 16 ± 13PsA 23 ± 13 | Assess prevalence of undiagnosed PsA among Pso-PsA patients using the PEST screening tool | Topical only (62 / 56), photo (13 / 17), systemic (12 / 22) | Cross-sectional, a dermatologist | n.a. |
| Maejima2010 | Case-control | 2323 | Japan; Department of Dermatology Kitasato University; Rheumatology | CASPAR | Not specified | Clarify clinical importance of nail disease in PsA | Not specified | Cross-sectional, assessor not specified | n.a. |
| Pietrzak2019 | Case-control | 6231 | Poland; Medical University of Lublin; not specified | CASPAR | PsoriasisPso-PsA 9.3 ± 10.1PsA 16.8 ± 13.2PsA10.4 ± 12.9 | Assess blood parameters of lipid metabolism and markers of oxidative stress in Pso-PsA and PsA patients | No topical retinoids, systemic therapy not specified | Cross-sectional, assessor not specified | n.a. |
| Reich2009 | Cross-sectional  | 1055312 | Germany; 48 community and academic centers; Dermatology | Moll & Wright criteria | PsoriasisPso-PsA 16.0PsA 21.0 PsANot specified | Assess prevalence and clinical patterns of PsA among Pso-PsA and PsA patients | Not specified | Cross-sectional, ‘dermatological assessment’ | n.a. |
| Salvarani1995 | Cross-sectional | 13075 | Italy; University of Bologna; unknown | Clinical | Unknown | (i) evaluate prevalence of PsA in Pso-PsA patients,(ii) compare ESSG and Amor classification criteria | Unknown | Unknown | n.a. |
| Schons2015 | Cross-sectional | 4916 | Brazil; University Hospital of Santa Maria; Dermatology | CASPAR | PsoriasisPso-PsA 10.0 (IQR 1-41)PsA 19.5 (IQR 1-40) | Study nail changes - and their clinical implications – in Pso-PsA and PsA patients | Pooled: topical (75), systemic (45) | Cross-sectional. one researcher | n.a. |
| Soy2008 | Case-control | 4049 | Turkey; Trakya University School of Medicine; Dermatology & Rheumatology | ESSG criteria | PsoriasisPso-PsA 17 ± 11PsA 19 ± 23PsA4.6 ± 3.5 | Explore characteristics of joint and nail involvement in PsA | Not specified | Cross-sectional, an experienced dermatologist | n.a. |
| Yang2011 | Cross-sectional  | 1816112 | China; Shandong Provincial Institute of Dermatology and Venereology; Dermatology | CASPAR | PsoriasisPso-PsA 7.8 ± 8.9PsA 14.1 ± 11.7PsANot specified | Assess prevalence of PsA among Pso-PsA and PsA patients | Not specified | Cross-sectional, multiple dermatologists | n.a. |
| Eder2016 | Prospective cohort | Baseline46408y FU40460 | Canada; University of Toronto psoriasis cohort; Dermatology clinics & advertisement | CASPAR | PsoriasisAll Pso 16.4 ± 14.4PsA 17 ± 15.2(at baseline) | In cohort of Pso-PsA patients (i) Estimate annual incidence of PsA,(ii) Identify markers for high risk of PsA  | Ever use of retinoids (9 / 13), MTX (9 / 15), TNFi (6 / 10) at baseline | At baseline, assessor not described (data from cohort database) | At baseline:-<10: mild-10-20: moderate->20: severe |
| Zenke 2017 | Retro-spective cohort | 974118 | Japan; St. Luke’s International Hospital Tokyo; Dermatology | Clinical by board-certified rheumatologists | PsoriasisPso-PsA 8.6 ± 9.5PsA 11.8 ± 10.6 | Investigate whether nail findings discriminate between PsA and Pso-PsA  | Not specified | At first visit, by multiple dermatologists | At first visit at the dermatology clinic:-<10: non-severe -≥10: severe |
| **BSA** |  |  |  |  |  |  |  |  |  |
| Tey2010 | Case-control | 266134 | Singapore; National Skin Center; Dermatology  | Clinical diagnosis by rheumatologist | Not reported (median age of psoriasis onsetPso-PsA 1 (mean age 44);PsA 30 (mean age 46)) | Determine characteristics associated with PsA in a sample of Pso-PsA patients | Not specified | Two designated dermatologists | Max. in 1y FU:-0-25%: I-26-50%: II-51-75%: III-76-100%: IV |
| Choi2017 | Cross-sectional | 17327 | S-Korea; dermatology clinic Seoul National University Bundang Hospital; Dermatology | CASPAR | PsoriasisPso-PsA 8.7 ± 10.0PsA 9.8 ± 9.6PsANot specified | (i) Investigate PsA prevalence in cohort of Pso-PsA patients, (ii) Study association PsA with psoriasis severity and other medical conditions  | Topical (100 / 100), photo (50 / 52), systemic (28 / 30; of which biologics (3 / 0)) | Cross-sectional by 1 highly experienced dermatologist | -<3: mild-3-10: moderate ->10: severe  |
| Cristhophers2010 | Cross-sectional  | 1434126 | UK, Italy, France, Spain, Germany; Dermatology | Clinical diagnosis | PsoriasisPso-PsA 11.0 ± 11.3PsA 17.3 ± 11.3PsANot specified  | (i) Assess whether time since PsO diagnosis affects risk of developing PsA in a cohort of Pso-PsA patients,(ii) compare Pso-PsA vs. PsA differences in QOL, comorbidities and healthcare resource utilization | Not specified | Multiple dermatologists | n.a.  |
| Gelfand2005 | Cross-sectional | 53071 | USA(48 states); random digital dialing technique | Self-report patient | Not specified | (i) Determine the prevalence of PsA in a cohort Pso-PsA patients,(ii) Determine impact on QOL of PsA | Not specified | self-report patient | -<1: no or little-1-2: mild-3-10: moderate->10: severe |
| Ogdie2013 | Cross-sectional | 3699365 | UK; The Health Improvement Network; electronic primary care medical record database | ≥ 1 read code consistent diagnosis b) | PsoriasisPso-PsA range 10-19PsA range 5-9PsANot specified | (i) Determine PsA prevalence in Pso-PsA patients in a population-based medical records database,(ii) Examine PsA-associated factors, (iii) Describe PsA patients DMARD use  | Topical (nr / 72), DMARD (nr / 46; of which biologics nr / 0.3) | General practitioners | -≤2: mild-3-10: moderate->10: severe |
| Pietrzak2019 | Case-control | 6231 | Poland; Medical University of Lublin; not specified | CASPAR | PsoriasisPso-PsA 9.3 ± 10.1PsA 16.8 ± 13.2PsA10.4 ± 12.9 | Assess blood parameters of lipid metabolism and markers of oxidative stress in Pso-PsA and PSA | No topical retinoids, systemic therapy not specified | Cross-sectional, assessor not specified | n.a. |
| Soltani-Arabshahi2010 | Cross-sectional | 693250 | USA; Utah Psoriasis Initiative; Dermatology | Physician diagnosis from self-reported questionnaire | Not specified (age PsA patients 47 ± 17, age at Pso onset 27 ± 17) | Study whether obesity increases the risk of PsA | Not specified | 2 faculty dermatologists | Highest ever:-<5: mild-5-10: moderate->10: severe |
| Stern1985 | Cross-sectional | 1019266 | Unknown | Clinical diagnosis | Unknown | Better define the epidemiology of arthritis among Pso patients | Unknown | Unknown | n.a. |
| Truong2015 | Observational cohort | 399169 | USA(Oregon, Washington); CEPPA clinic; Dermatology | Clinical diagnosis by rheumatologist | PsoriasisPso-PsA 17.7 ± 14PsA 20.2 ± 14.2 | Identify and compare demographics, clinical characteristics and QOL in cohort of Pso-PsA and undiagnosed PsA | Systemic (10 / 12) | Multiple dermatologists | n.a. |
| Yan2018 | Cross-sectional | 497175 | USA(California); University of California, San Francisco; Dermatology | Clinical diagnosis by dermatologist or rheumatologist | PsoriasisPso-PsA 17PsA 22PsANot specified | Identify clinical and genetic factors that discriminate PsA from Pso-PsA  | Naïve, topical, systemic and phototherapy (numbers not specified) | Not specified | -mild-mild-moderate -moderate-severe -severe c) |
| **Sites** |  |  |  |  |  |  |  |  |  |
| Thumboo2002 | Case-control | 12060 | USA(Minnesota); Rochester Epidemiology Project; residents seeking medical care  | Clinical diagnosis by physician | PsoriasisPso-PsA 6.2PsA 5.8PsANot specified | Identify factors influencing development of PsA in Pso-PsA  | Coal tar (49 / 45), MTX (1 / 0), photo (10 / 3) | Multiple dermatologists | -≤2: limited->2: generalized |
| Wilson2009 | Prospective cohort (FU 30 years) | Baseline1633020.936 person y FU 159357 | USA(Minnesota); Rochester Epidemiology Project medical; residents seeking medical care  | CASPAR | Not specified | Identify predictors of PsA in a large cohort of Pso-PsA only patients | Not specified | Multiple dermatologists | At baseline:-Unknown-1 sites-2 sites-≥3 |

**Legend**: a) Study setting or departments in which patients were recruited. b) Read code: comprehensive hierarchical alphanumeric clinical language developed in the UK to record diagnoses, symp- toms and tests, similar to International Classification of Diseases codes (Chishom J. The Read clinical classification. BMJ 1990; 300:1092).

**Abbreviations**: BSA: body surface area; CASPAR: classification criteria for psoriatic arthritis; DMARD: disease-modifying antirheumatic drug; ESSG: European Spondyloarthropathy Study Group; FU: follow-up; GEPARD: GErman Psoriasis ARthritis Diagnostic questionnaire; HR: hazards ratio; HRCU: healthcare resource utilization; MSK: musculoskeletal; MTX: methotrexate; NR: not reported; NS: not significant; OR: odds ratio; PASI: psoriasis area and severity index; PEST: Psoriasis Epidemiology Screening Tool; PsA: psoriatic arthritis; Pso-PsA: psoriasis without psoriatic arthritis; QOL: quality of life; RR: risk ratio; SD: standard deviation; TNFi: tumour necrosis factor α inhibitor; US: ultrasound; UST: ustekinumab (IL-12/23 inhibitor).