

**P183 ESTABLISHING THE EPIDEMIOLOGY OF RHEUMATOID ARTHRITIS, PSORIATIC ARTHRITIS, AND AXIAL SPONDYLOARTHRITIS IN ENGLAND USING PRIMARY CARE ELECTRONIC HEALTH RECORD DATA**

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**Background/Aims**

The substantial personal and socioeconomic costs associated with rheumatoid arthritis (RA), psoriatic arthritis (PsA), and axial spondyloarthritis (SpA) make understanding their epidemiology crucial. The Clinical Practice Research Datalink (Aurum) is an electronic healthcare record (EHR) database, containing primary care records from ~20% of English practices (>13 million patients currently registered). To determine RA/PsA/axial SpA epidemiology using EHR data, validated methods need to be applied to ascertain patients with these diagnoses. To address this, we updated and applied approaches validated in other primary care EHR databases in Aurum and described the annual incidence/point-prevalence of RA/PsA/axial SpA alongside patient characteristics (providing indirect evidence of coding accuracy).

**Methods**

Diagnosis and synthetic disease-modifying anti-rheumatic drug (DMARD) prescription code lists were constructed, and pre-defined approaches for ascertaining patients with RA/axial SpA/PsA applied. The annual incidence and point-prevalence of RA/PsA/axial SpA were calculated from 2004-2020. Samples were stratified by age/gender, and mean age and gender/ethnic-group relative frequencies

described. The study was approved by the CPRD Independent Scientific Advisory Committee (reference 20\_000244).

**Results**

From 2004-2019 the point-prevalence of RA/PsA increased annually, peaking in 2019 (RA 7.79/1,000; PsA 2.87/1,000) then falling slightly. From 2004-2020 the point-prevalence of axial SpA increased annually (except in 2018/2019), peaking in 2020 (1.13/1,000). Annual RA incidence was higher between 2013-2019 (when included in the Quality Outcomes Framework, ranging 0.491 to 0.521/1,000 person-years) than 2004-2012 (ranging 0.345 to 0.400/1,000 person-years). The annual incidence of PsA and axial SpA increased from 2006 (0.108 to a peak of 0.172/1,000 person-years) and 2010 (0.025 to a peak of 0.045/1,000 person-years), respectively. These years were when new disease classification criteria were introduced. Marked falls in the annual incidence of RA, PsA and axial SpA between 2019 and 2020 were seen, reducing by 40.1%, 67.4% and 38.1%, respectively, reflecting the impact of the COVID-19 pandemic on arthritis diagnoses. Stratifying incidence/prevalence by age/gender broadly showed expected patterns (although the incidence of axial SpA/PsA in women increased over time), and the mean age and gender proportions followed those previously reported.

**Conclusion**

The approaches we used to determine patients with RA, PsA, and axial SpA in Aurum led to incidence/prevalence estimates broadly consistent with published studies, and patient characteristics as would be expected. These data support the potential of the Aurum-updated ascertainment approaches for use in further studies of RA, PsA and axial SpA.

**Disclosure**

**I. Scott:** None. **R. Whittle:** None. **J. Bailey:** None. **H. Twohig:** None. **S. Hider:** None. **C. Mallen:** None. **S. Muller:** None. **K. Jordan:** None.



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