Figure 2. Forest plot showing pooled odds ratio between baseline magnetic resonance imaging features of hand osteoarthritis and joint tenderness.

Figure 3. Forest plot showing pooled odds ratio between baseline power Doppler and radiographic change over time

Conclusion: Imaging-detected inflammatory features and osteophytes associate with joint tenderness. In addition, imaging-detected inflammatory changes at baseline predict future development and progression of structural OA changes, indicating that inflammation may precede radiographically-detectable structural changes.

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Epidemiology

OP0067

CUMULATIVE ANTIBIOTIC USE AND THE RISK OF DEVELOPING ANKYLOSING SPONDYLITIS: A POPULATION-BASED CASE CONTROL STUDY

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Background: Recent studies show possible mechanisms of microbiota alterations that lead to the development of Ankylosing spondylitis (AS). These disturbances in the microbiota can be caused by long-term and high dose intake of antibiotics

Objectives: To analyze the association between antibiotic/s use and the risk of developing AS.

Methods: Population based case-control study using electronic medical records data from SIDIAP, covering >80% of the population in Catalonia, Spain. AS diagnoses with 2+ years data available were matched to up to 5:1 controls of same age, sex, and GP practice, and similar follow-up. Tracking of antibiotic use in the previous two years was done through pharmacy dispensation data standardized with ATC codes, and categorized in terms of recency of use and quartiles of cumulative dose. Adjusted odds ratios were estimated using conditional logistic regression analyzing antibiotic use (yes/no), recency of intake (current, recent, past, no use) and cumulative dose (quartiles of daily defined doses in the previous two years). All analyses were adjusted for age, body mass index, smoking, co-morbidity, socio-economic deprivation and number of GP visits as a proxy for healthcare resource use.

Results: The study included 4,493 cases diagnosed with AS and 22,016 controls. 46.3% of cases and 28.2% of controls had taken antibiotics. An association between taking beta-lactams (OR 1.18 [95% CI: 1.09-1.28]) and taking macrolides (OR 1.34 [95% CI: 1.18-1.52]) and getting diagnosed with AS was found. This association was stronger with current/recent use (Figure 1), but no dose-response pattern was seen (Figure 2).

Figure 1. Recency of use and AS diagnosis.

Figure 2. Cumulative use and AS diagnosis

Conclusion: There is an association between use of certain types of antibiotics and the diagnosis of AS, but no dose-response gradient. These data do not support a causal effect of cumulative antibiotic use on the development of AS. More research is needed on the impact of microbiome disturbance on the risk of developing AS.

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OP0068

INCIDENCE AND PREVALENCE OF RHEUMATOID ARTHRITIS IN DENMARK: A NATIONWIDE POPULATION-BASED STUDY INVESTIGATING THE EFFECT OF FOUR DIFFERENT CASE DEFINITIONS

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Background: The incidence rate (IR) and point prevalence (PP) of rheumatoid arthritis (RA) in Denmark is largely unknown. Two challenges in estimating the “true” IR and PP using nationwide registry data are the choice of the RA case definition, and the denominator used, i.e. the exact amount of person years (PY) or census count data.

Objectives: To investigate the incidence and prevalence of RA in the adult Danish population using four different case definitions and two different denominator strategies.

Methods: Nationwide register-based cohort study. Patients with RA between 1996 and the end of 2016 were identified using the Danish National Patient Registry (DNPR) and information on DMARD prescriptions were obtained through linkage with the Danish National Prescription Registry. Age and sex standardised incidence and prevalence of RA were calculated in different ways: we estimated the IR (denominator = actual recorded number of PY in each year using migration and vital data) and the incidence proportion (IP) (denominator = census count data); and the PP (%) of RA was calculated for years 2000, 2009, 2011 and 2016. The four case definitions were: Model A, a first time RA diagnosis (ICD-10: M05-06) in DNPR and a redeemed prescription of a conventional DMARD in the following year¹; Model B, an RA diagnosis recorded twice in DNPR within 90 days with both records originating from a department of rheumatology or general internal medicine²; Model C, any RA diagnosis recorded in DNPR with a DMARD prescription redeemed in the year before or after the diagnosis; Model D, similar to Model A but with the additional requirement that cases had no registered ICD code for inflammatory diseases prior to the RA diagnosis¹.

Results: The overall IR of RA from 1996 to 2016 based on model A was 35.2 (95%CI 34.8 to 35.6) per 100,000 PY while the IP was 34.7 (95%CI 34.3 to 35.1) per 100,000 individuals. The age standardised IR was higher for women than for men (Figure 1), and this was observed across all age groups. The IR peaked at age 70 to 74 in both men and women. Regardless of which case definition was used, the temporal trend showed a peak in IR in 2010 followed by a plateau (Figure 2). The overall PP estimate for all four models increased from 2000 to 2016, data shown for Model A in Table 1.

Table 1. Point prevalence (PP) of rheumatoid arthritis in years 2000, 2009, 2011 and 2016 based on Model A				
	2000	2009	2011	2016
	N = 5906 70.3 % women	N = 15037 70.9 % women	N = 17363 71.0 % women	N = 22991 70.3 % women
	PP (%) (95% CI)	PP (%) (95% CI)	PP (%) (95% CI)	PP (%) (95% CI)
All	0.16 (0.15 to 0.16)	0.37 (0.36 to 0.37)	0.41 (0.41 to 0.42)	0.52 (0.51 to 0.52)
Women	0.21 (0.20 to 0.22)	0.50 (0.49 to 0.51)	0.57 (0.56 to 0.58)	0.71 (0.70 to 0.72)
Men	0.10 (0.10 to 0.11)	0.23 (0.22 to 0.23)	0.25 (0.25 to 0.26)	0.32 (0.31 to 0.33)

Conclusion: A peak in the IR of RA was observed in 2010, regardless of which case definition was used. We believe this was due to introduction of the new EULAR/ACR diagnostic criteria at that time. IP estimates were systematically lower than IRs calculated using exact migration and vital data as denominator. The PP increased over time regardless of which case definition we used. We conclude that the choice of RA case definition had a larger influence than the choice of denominator.

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OP0069

FACTORS ASSOCIATED WITH THE RISK OF SEPSIS IN PATIENTS WITH IMMUNE-MEDIATED INFLAMMATORY DISEASES TREATED WITH ANTI-TUMOR NECROSIS FACTOR-ALPHA: A NATIONWIDE, POPULATION-BASED COHORT STUDY

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Background: Anti-TNF-α agents have been proven to be effective for patients with immune-mediated inflammatory diseases (IMIDs) including rheumatoid arthritis (RA), ankylosing spondylitis (AS), psoriasis (PsO), psoriatic arthritis (PsA), Crohn's disease (CD) and ulcerative colitis (UC). Prior studies have shown an increased risk of infection in IMID patients treated with anti-TNF-α but limited studies investigated factors associated with the development of sepsis in patients with IMIDs.