(RR:1.82, 95% CI:1.08–2.98), diseases of the musculoskeletal system and connective tissue (RR:1.49, 95% CI:1.05–2.05), and for injuries and poisoning (RR:1.46, 95% CI:1.01–2.06). While not significantly increased overall, hospitalizations for diseases of the circulatory system were significantly increased in patients with pSS aged ≥75 years (RR:1.54, 95% CI: 1.11–2.11).
Conclusions: Patients with pSS experienced higher rates of hospitalisation than the general population. Hospitalizations for endocrine/metabolic disorders, diseases of the circulatory system, diseases of the musculoskeletal system and connective tissue disorders, and injuries were more common among patients with pSS than comparators.
Disclosure of Interest: None declared
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SAT0696 ASSOCIATIONS BETWEEN ANTIBIOTICS FOR NON-TUBERCULOUS MYCOBACTERIAL INFECTION AND INCIDENT SJÖGREN'S SYNDROME: A NATIONWIDE, POPULATION-BASED CASE-CONTROL STUDY

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Background: We recently reported an association between Sjögren's syndrome (SS) and prior nontuberculous mycobacterial (NTM) infection which was defined as having a diagnosis of NTM with concurrent combinational antibiotics therapy for NTM infection. However, whether the increased risk of SS was attributed to NTM infection or antibiotics used to treatment NTM infection was unknown.
Objectives: To address the association between use of antibiotics which can be used to treat NTM infection and the risk of newly diagnosed SS.
Methods: Using a nationwide, population-based, claims dataset, 5751 newly diagnosed SS were identified, and we further excluded those (n=198) having a history of confirmed or suspected mycobacterial infection to avoid the confounding effect of NTM infection-associated incident SS as we previously identified. A total of 5,553 SS cases were enrolled and compared them with 83 295 non-SS controls matched (1:15) for age, sex, and their year of first SS diagnosis date. The association between the risk of incident SS and antibiotics was determined by calculating odds ratios (ORs) with 95% confidence intervals (CIs) using conditional logistic regression analysis.
Results: After adjusting for potential confounders, the risk of SS was increased in patients treated with new macrolides (aOR 1.95, 95% CI 1.80–2.11), fluoroquinolones (aOR 1.52, 95% CI 1.41–1.64), and tetracyclines (aOR 1.69, 95% CI 1.59–1.79) compared with those in non-SS controls after adjusting for CCI, bronchiectasis and *Helicobacter pylori* infection. Notably, we found that the association was consistent among each antibiotic in these three groups of antibiotics. In contrast to these three groups of antibiotics, usage of amikacin was found to have a negative association with incident SS (aOR 0.68, 95% CI 0.53–0.87).

	Model A	Model B
	aOR (95% CI)	aOR (95% CI)
New macrolide		1.95 (1.80–2.11)
Clarithromycin	1.84 (1.69–2.01)	
Azithromycin	2.07 (1.71–2.51)	
Aminoglycoside		0.68 (0.53–0.87)
Amikacin	0.58 (0.41–0.81)	
Streptomycin		
Kanamycin	0.83 (0.58–1.19)	
Fluoroquinolone		1.52 (1.41–1.64)
Ofloxacin	1.15 (1.01–1.32)	
Ciprofloxacin	1.34 (1.17–1.54)	
Levofloxacin	1.50 (1.22–1.85)	
Moxifloxacin	1.43 (1.30–1.56)	
Tetracycline		1.69 (1.59–1.79)
Doxycycline	1.59 (1.49–1.70)	
Minocycline	1.48 (1.35–1.62)	

Conclusions: New macrolides, fluoroquinolones and tetracyclines were associated with a higher incidence of SS, whereas usage of amikacin had a negative correlation. These findings indicated the need for vigilance of SS in prescribing these antibiotics to treat NTM and other infectious diseases and warrant further mechanistic studies.

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SAT0697 ASSOCIATION BETWEEN TONSILLITIS AND NEWLY DIAGNOSED ANKYLOSING SPONDYLITIS: A NATIONWIDE, POPULATION-BASED, CASE-CONTROL STUDY

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Background: To date, two most commonly proposed environmental risk factors for ankylosing spondylitis (AS) include mechanical stress at the enthesis and infections. A recent Swedish study showed that childhood tonsillitis was associated with future development of AS. However, no Ascian study has reported this association.
Objectives: To investigate the association between tonsillitis and the risk of newly diagnosed AS.
Methods: We used 2003–2012 data from the Taiwanese National Health Insurance Database to perform a nationwide, population-based, case-control study. We identified AS patients newly diagnosed from 2005 to 2012 as the study group and selected sex, age and the year of index date matched (1:6) non-AS individuals as controls. Using conditional logistic regression analysis after adjustment for potential confounders, including a history of periodontitis, appendicitis, and Charlson comorbidity index (CCI), we measured the association of AS risk with prior tonsillitis by calculating odds ratios (ORs) with 95% confidence intervals (CIs). Sensitivity analyses for the association between AS risk and tonsillitis were conducted by varying the definition of tonsillitis.
Results: We identified 37 002 incident AS cases and 2 22 012 matched non-AS controls. The risk of AS was associated with tonsillitis (OR, 1.80; 95% CI, 1.55–2.10) after adjustment for potential confounders. The association between AS risk and a history of tonsillitis remained significant by using various definitions of tonsillitis based on ICD9-CM Codes. Such associations were consistent across various subgroups stratified by age, sex, and a history of periodontitis or appendicitis.
Conclusions: The present study reveals an association between AS risk and prior tonsillitis.

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SAT0698 MORTALITY OF PATIENTS WITH DIAGNOSED RHEUMATOID ARTHRITIS (RA) IN GERMANY 2012: ANALYSIS OF CLAIMS DATA FROM 60 MILLION PEOPLE

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Background: Mortality data of RA patients in Germany are sparse. Recently, data on the prevalence and incidence of RA comprising about 75% of the German population became available.[1] In case of chronic diseases, it is possible to

Abstract SAT0697 – Table 1. Conditional logistic regression analyses for the association between covariates with AS risk

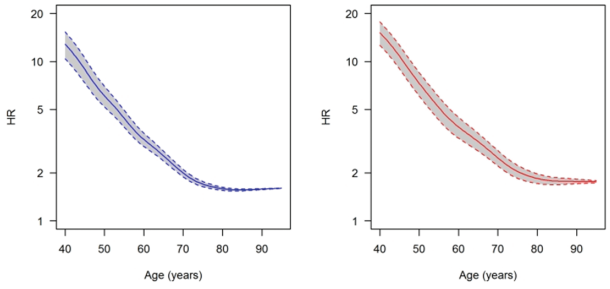
Covariate	Univariate analysis OR (95% CI)	Multivariable aOR (95% CI)	Multivariable aOR (95% CI)	Multivariable aOR (95% CI)	Multivariable aOR (95% CI)	Multivariable aOR (95% CI)	Multivariable aOR (95% CI)	Multivariable aOR (95% CI)
Tonsillitis	1.96 (1.68–2.28)	1.80 (1.55–2.10)						
Chronic tonsillitis and adenoiditis	1.99 (1.38–2.86)		1.83 (1.26–2.64)					
Acute tonsillitis	1.96 (1.67–2.31)			1.81 (1.53–2.13)				
Tonsillectomy	1.89 (1.36–2.61)				1.66 (1.19–2.31)			
Tonsillitis with tonsillectomy	2.06 (1.33–3.19)					1.90 (1.22–2.97)		
Chronic tonsillitis and adenoiditis with tonsillectomy	1.90 (1.19–3.03)						1.73 (1.08–2.79)	
Acute tonsillitis with tonsillectomy	4.00 (1.13–14.18)							4.10 (1.15–14.63)
Periodontitis	1.42 (1.38–1.45)	1.32 (1.29–1.36)	1.32 (1.29–1.36)	1.32 (1.29–1.36)	1.32 (1.29–1.36)	1.32 (1.29–1.36)	1.32 (1.29–1.36)	1.32 (1.29–1.36)
CCI ≧1	2.22 (2.15–2.29)	2.19 (2.12–2.26)	2.19 (2.13–2.26)	2.19 (2.12–2.26)	2.19 (2.12–2.26)	2.19 (2.13–2.26)	2.19 (2.13–2.26)	2.19 (2.13–2.26)
Appendicitis	1.36 (1.19–1.56)	1.31 (1.14–1.50)	1.31 (1.15–1.50)	1.31 (1.15–1.50)	1.31 (1.15–1.50)	1.31 (1.15–1.50)	1.31 (1.15–1.50)	1.31 (1.15–1.50)

estimate excess mortality of diseased people compared to non-diseased people if prevalence and incidence are known.

Objectives: To compute the mortality in RA patients in comparison to the population without RA in Germany, utilising claims data from 60 million people.

Methods: We used a mathematical relation between the age-specific prevalence, incidence and mortality to estimate the age- and sex-specific hazard ratio (HR) of mortality rates for patients with diagnosed RA compared to patients without RA.[2] Standardised mortality ratios (SMRs) for men and women were calculated using the sex-specific age distributions in Germany in 2012. In addition, we calculated years of lost life (YLL) for men and women aged 40 and 60 years with diagnosed RA.

Results: Estimation of sex-specific HR in the age range of 40 to 95 years is possible from the data in.[1] The age-specific HRs are elevated in both male and female RA patients (figure 1, left panel and right panel, respectively) with a particular increase in the younger. SMRs in the age range of 40 to 95 are 1.93 and 2.15 for men and women, respectively. YLL at age 40 are 12.0 and 7.5 years for men and women with RA, respectively. The associated YLLs at age 60 are 5.2 and 4.7 years.



Abstract SAT0698 – Figure 1. Age-specific HR for men (left) and women (right) in Germany 2012. Grey regions indicate the range of possible values.

Conclusions: Despite the limitation of the data source (claims data), an estimation of excess mortality in terms of the HR is possible and yields plausible results. The obtained SMRs are similar to comparable populations.[3] At age 40 men with RA suffer more from reduced life expectancy than women with RA. At age 60 the difference in YLL between men and women with RA is virtually vanished.

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SAT0699 PREDICTION OF CARDIOVASCULAR EVENTS IN RHEUMATOID ARTHRITIS PATIENTS USING A MULTI-BIOMARKER OF DISEASE ACTIVITY

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Background: The ACC/AHA recommends preventive strategies for patients with a high predicted risk of atherosclerotic cardiovascular disease (CVD). RA patients are at higher risk for CVD events, yet the role of systemic inflammation and the influence of traditional CVD risk factors is unclear with respect to risk prediction in RA.

Objectives: A simple and accurate algorithm for predicting CVD event risk that includes systemic inflammation might help risk assessment for RA patients and optimise preventive care.

Methods: We derived a U.S. cohort of RA patients with multi-biomarker disease activity (MBDA) test results linked to Medicare claims data. Patients had to have ≥1 year baseline with Medicare coverage prior to the first MBDA test. Exclusions were past MI, PCI/CABG, stroke, or cancer. Follow-up ended at the earliest of 1) CVD event; 2) other than CVD cause of death; 3) loss of coverage; or 4) 12/31/2014. The composite CVD event comprised of incident MI, stroke or fatal CVD event, using validated algorithms. MBDA scores were grouped as low (<30), moderate,[30–44] and high (>44). Other predictors included demographics, healthcare utilisation, and comorbidities. Three separate models were developed using Cox regression. Model 1 included age, sex and race. Model 2 included age, sex race, 9 comorbidities and CVD medication classes, plus interaction terms. Model 3 included age, sex, and race plus categorised MBDA score. We calculated the net reclassification index (NRI) for model 2 and 3 compared to model 1. We also plotted the observed vs. predicted probability of CVD event for each model, with risk categorised as low (<7.5), moderate (7.5-<15) and high (≥15) per 1000 person-years based upon annualised ACC/AHA cutpoints.

Results: A total of 15,757 RA patients were included; mean (SD) age 68.6 (10.8) years, 80% female, 80% white. A total 209 CVD events occurred in 14 843 person years (1.41/100 py). The median (IQR) follow up time was 0.84 (0.41, 1.27) year. The maximum event time was at 2.7 year. All models had reasonable discrimination and calibration; model 3 was better than models 1 and 2 and observed vs predicted risk is shown (figure 1). The sum of the absolute difference between observed and predicted probability was 0.56, 0.57 and 0.33 for models 1, 2 and 3 respectively.

Compared to model 1, model 2 resulted in a positive overall NRI of 0.214 (non-event NRI=0.173, event NRI=0.041); model 3 resulted in positive overall NRI of 0.279

(non-event NRI=0.092, event NRI=0.187), consistent with more accurate CVD event classification.