Multiple imputation was used to deal with missing data. The PS (i.e. the probability of receiving TNFi conditional on observed characteristics) was estimated using logistic regression. This included age, gender, ethnicity, index of multiple deprivation, BMI, smoking, year of registration, duration of RA, DAS-28, HAQ, SF36, ACR criteria, comorbidities, and comedications. A PS calliper of 0.2 was used to match all TNFi users to csDMARD users (with replacement) using a 1:1 ratio. Weighted Cox regression was used to estimate the impact of TNFi use on study outcomes, adjusted for any confounders that remained unbalanced.

Results: Our 1:1 matched cohort contained a total of 19 116 patient records. THR rate was 6.30/1,000 PYs [95% CI: 4.24 to 9.76] and 5.22/1,000 PYs [CI: 4.66 to 5.88] in the csDMARD and TNFi cohorts, respectively. TKR rate was 8.09/1,000 PYs [CI: 5.32 to 12.89] and 8.89/1,000 PYs [CI: 8.13 to 9.72], respectively. There was no significant association between TNFi use and THR or TKR (HRs=0.86 [CI: 0.60 to 1.22] and 1.11 [CI: 0.84 to 1.47], respectively), although when analyses were restricted to patients with DAS >5.1 (as per NICE guidance) these HRs were 0.74 [CI: 0.51–1.05] and 0.95 [CI: 0.71 to 1.26], respectively. Among those over 60 years old, TNFi was associated with a significant reduction in THR (HR=0.60 [CI: 0.41–0.87]) but not TKR (HR=1.31 [CI: 0.87–1.99]). THR but not TKR rates were also reduced among those with an above average HAQ score. Overall, no significant associations were found for OJR.

Conclusions: Our findings suggest TNFi use may reduce the need for THR in older and more severe RA patients, although no evidence was found for a reduction in younger or less severe patients or in rates of TKR or OJR. Further work is needed to confirm these results.

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SLE, Sjögren's and APS- new criteria, novel diagnostic tools and co-morbidities

OP0117

SAFETY AND IMMUNE RESPONSE OF A LIVE ATTENUATED HERPES ZOSTER VACCINE IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS: A RANDOMISED PLACEBO-CONTROLLED TRIAL

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Objectives: To evaluate the safety and immune response of a live attenuated herpes zoster (HZ) vaccine in patients with systemic lupus erythematosus (SLE) in a randomised placebo-controlled trial.

Methods: Adult patients who fulfilled ≥ 4 ACR criteria for SLE and had a SLEDAI score < 6 with stable immunosuppressive treatment for 6 m were recruited. Exclusion criteria were: active infection; lymphocyte $< 500/\text{mm}^3$; reduced serum IgG/A/M level; serum creatinine $> 200 \mu\text{mol/L}$; a history of cancer; and high-dose immunosuppressive treatment (prednisone $> 15 \text{ mg/day}$, azathioprine $> 100 \text{ mg/day}$, MMF $> 500 \text{ mg/day}$, cyclosporin $> 100 \text{ mg/day}$, tacrolimus $> 3 \text{ mg/day}$, CYC and biologics). Participants were randomly assigned to receive HZ vaccine (Zostavax) or placebo (same volume of normal saline) given subcutaneously. Anti-VZV IgG reactivity (baseline and 6 weeks post-vaccination) was measured by an ELISA coated with inactivated varicella-zoster viral antigen (Vidas VZV IgG, bioMérieux, Marcy l'Etoile, France). Cell-mediated response to HZ was assessed by a specific VZV-stimulated IFN γ enzyme linked immunospot (ELISPOT) assay. Disease activity of SLE was assessed by the SLEDAI and PGA. Adverse events (AEs) and immune responses to HZ of the two groups were compared.

Results: 90 SLE patients were recruited (age 45.6 ± 14.1 years; 93% women): 45 assigned to HZ vaccine and 45 to placebo. All participants had a history of HZ/

chickenpox infection. The baseline clinical profile of the two groups of patients was similar. Only 3 patients in the vaccine and 1 patient in the placebo group had mild SLE activity (all mild thrombocytopenia). Baseline SLEDAI and PGA scores of the two groups were not significantly different (1.58 ± 1.8 vs 1.64 ± 1.7 ; $p=0.86$ and 0.21 ± 0.18 vs 0.27 ± 0.25 ; $p=0.18$, respectively). The proportion of patients receiving various immunosuppressive agents, lymphocyte count, serum creatinine, IgG/A/M levels were also similar in the two groups. The mean baseline VZV IgG index value was 3.28 ± 1.19 and 3.45 ± 1.07 in the vaccine and control group of patients, respectively ($p=0.48$). The paired VZV IgG titer at week 6 was significantly higher in the vaccine than control group, even after adjustment for baseline value (4.16 ± 1.26 vs 3.32 ± 1.01 ; $p<0.001$), lymphocyte count, Ig levels, SLEDAI, and other clinical variables. The% increase in VZV IgG antibody was significantly higher in the vaccinated than control patients ($+59.8\%$ vs -2.1% ; $p=0.01$), indicating an effect of vaccine. 21 and 6 AEs were reported in the vaccinated and control patients, respectively, but none were serious. Significantly more vaccinated patients reported pain and erythema at the injection site than controls (31% vs 7%; $p<0.01$) (mild in all and subsided in a few days). Other AEs more commonly reported with vaccination included dizziness (2%), arthralgia (2%) and subjective fever (4%). Two vaccinated patients (4.4%) had mild flare of skin/joint disease, and one control patients (2.2%) had mild increase in proteinuria between week 0 and 6. None of the patients had clinical HZ infection post-vaccination.

Conclusions: In patients with stable SLE who were not receiving intensive immunosuppression, the live attenuated HZ vaccine was well tolerated and provoked an expected antibody response. Study of the cell-mediated response to HZ post-vaccination is in progress.

Disclosure of Interest: None declared

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OP0118

DEVELOPMENT OF METABOLIC SYNDROME IN PATIENTS WITH SLE: RESULTS FROM AN INCEPTION COHORT

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Background: Individuals with systemic lupus erythematosus (SLE) are at increased risk of cardiovascular disease, which is possibly related to metabolic syndrome (MetS). Previous studies suggest that inflammation may be an important underlying mechanism in MetS development, but include patients with prevalent MetS only. In order to assess whether the development of incident MetS could be predicted, we examined the association between the onset of MetS and disease activity, therapeutic exposure, and biomarkers of inflammation overtime in patients with SLE.

Objectives: 1) To identify the clinical characteristics of patients with recently diagnosed SLE who develop incident MetS during first two years of follow-up; 2) To determine whether metabolic and inflammatory biomarkers improve the ability to predict incident MetS during follow-up.

Methods: We studied 1687 recently diagnosed SLE patients (< 15 months) enrolled into the SLICC Inception Cohort from 11 countries. Clinical, therapeutic and laboratory data were recorded at baseline and annually at follow-up visits. Serum concentrations of adiponectin, B-lymphocyte stimulator, high sensitivity C-reactive protein, interleukin (IL)-6, IL-18, IL-18 binding protein, insulin, leptin and tumour necrosis factor alpha were measured, if samples were available. A complete-case analysis was performed. Only patients with both MetS status available at baseline, year 1 and year 2 visits were analysed. Logistic regression was performed to analyse which factors were predictive of the development of incident MetS in the first 2 years of follow-up. Patients who developed incident MetS were compared with those who were free of MetS throughout follow-up.

Results: Overall, 436 (26%) patients were included in this complete-case analysis. Of these, 243 (56%) were free of MetS throughout the follow-up period, 87 (20%) had persistent MetS at each visit, and 106 (24%) developed incident MetS during follow-up. In a multivariable logistic regression model that excluded biomarkers, clinical factors associated with future onset of MetS included increased age, Hispanic ethnicity, active renal disease, higher disease activity and current corticosteroid use. This model performed 'fairly' when identifying patients likely to develop incident MetS (Area Under Receiver Operator Characteristics Curve (AUC ROC)=0.77). In a multivariable model that included the inflammatory and

metabolic biomarkers, increasing age, Korean ethnicity, higher disease activity and increased serum leptin performed similarly (AUC ROC=0.75).

Conclusions: SLE patients who develop incident MetS exhibit a more inflammatory disease phenotype, with higher corticosteroid exposure in the preceding visit. Increased serum leptin concentration is independently associated with future onset of MetS. These factors can help predict those at increased risk of developing future MetS and may help target patients for more focused cardiovascular disease prevention.

Disclosure of Interest: None declared

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OP0119

PROGRESSION OF SUBCLINICAL ATHEROSCLEROSIS IN SYSTEMIC LUPUS ERYTHEMATOSUS OF LOW DISEASE ACTIVITY: THREE-YEAR FOLLOW-UP AND COMPARISON TO RHEUMATOID ARTHRITIS

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Background: Both systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA) are characterised by accelerated atherosclerosis compared to the general population. Prospective studies have shown that atherosclerosis progression is halted in patients with RA of low disease activity, but it is unclear if maintaining lupus low disease activity state mitigates accelerated atherosclerosis due to SLE.

Objectives: To prospectively assess the risk and determinants of atherosclerosis progression in SLE versus RA patients of low disease activity.

Methods: We performed carotid and femoral artery ultrasound to detect atherosclerotic plaques at baseline on 345 participants with SLE, RA, and healthy controls, individually matched for age and gender, after excluding patients with atherosclerotic cardiovascular disease, malignancy and diabetes. After 3 years of follow-up, patients with SLE (n=89) and RA (n=64) maintaining low disease activity¹ for >75% of the follow-up time, and their matched controls (n=72) underwent repeat ultrasound to identify those with atherosclerosis progression, as defined by the development of new plaques compared to baseline. We applied multiple logistic regression models to assess the odds of atherosclerosis progression between SLE, RA, and control participants, and used the stepwise backward elimination algorithm (p<0.1) to examine potential associations with SLE damage index, anti-phospholipid antibodies, corticosteroids, hydroxychloroquine, immunosuppressives, and disease duration in patients with SLE, adjusting for use of antiplatelet agents, statins, and traditional cardiovascular risk factors with the European Society of Cardiology's SCORE risk estimation of 10 year fatal cardiovascular disease.

Results: Atherosclerotic plaque progression was detected in 21% of SLE patients, 17% of RA patients, and 8% of controls (p=0.078). After controlling for SCORE, antiplatelet agent use and statins, the rate of atherosclerosis progression compared to healthy controls was significantly higher in SLE (OR=3.05, 95% Confidence Interval (CI) 1.06–8.79, p=0.039), but not in RA (OR=2.11, 95% CI: 0.72 to 6.23, p=0.176). In patients with SLE, longer disease duration at baseline (OR=1.11, 95% CI: 1.02 to 1.21, p=0.015), antiphospholipid antibody positivity (OR=7.04, 95% CI: 1.57 to 31.58, p=0.011 cumulative corticosteroid dose during follow-up (OR=1.16, 95% CI: 0.99 to 1.35, p=0.069), treatment with antiplatelet agents (OR=0.21, 95% CI: 0.05 to 0.99, p=0.049), and the SCORE prediction (OR=1.67, 95% CI: 0.91 to 3.08, p=0.099) were included in the multivariable model as determinants of atherosclerosis progression. No disease-related determinants were significantly associated with atherosclerosis progression in patients with RA.

Conclusions: Unlike RA, atherosclerosis progression is accelerated in SLE even in the setting of low disease activity. In addition to SCORE, longer disease duration at baseline, antiphospholipid antibody positivity, and higher cumulative corticosteroid dose during follow-up increase the odds of atherosclerosis progression in patients with SLE of low disease activity.

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OP0120

INFLUENCE OF EPIDEMIOLOGY AND ETHNICITY ON SYSTEMIC EXPRESSION OF PRIMARY SJÖGREN SYNDROME IN 9974 PATIENTS

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Objectives: To analyse the influence of epidemiology and ethnicity on the clinical systemic presentation at diagnosis of primary Sjögren syndrome (SjS).

Methods: The Big Data Sjögren Database included 10 475 worldwide patients from 22 countries fulfilling the 2002 criteria. Age at diagnosis, gender and ethnicity (77% White, 14% Asian, 6% Hispanic, 1% Black/African American, 2% others) were correlated with systemic involvement at diagnosis (retrospectively scored in 9974 patients using ESSDAI/clinESSDAI)

Results: Men had higher mean ESSDAI (8.0 vs 5.9, p<0.001) and clinESSDAI (8.4 vs 6.1, p<0.001) in comparison with women; the domains more active in men included lymphadenopathy (p<0.001), glandular (p<0.001), pulmonary (p=0.001), PNS (p<0.001) and CNS (p<0.001). Highest scores were also reported in patients with young-onset disease (<35 years) with respect to older onset (>65 years) for ESSDAI (6.5 vs 5.6, p=0.002) and clinESSDAI (6.4 vs 5.8, p=0.034). Highest ESSDAI scores were reported in Black/African American, followed by White, Asian and Hispanic patients (6.7 vs 6.3 vs 5.4 vs 4.9, respectively, p<0.001). BAA patients showed the highest frequency of activity in lymphadenopathy, articular, PNS, CNS and biological domains, Whites in glandular, cutaneous and muscular, Asians in pulmonary, renal and haematological and Hispanics in the constitutional domain.

Conclusions: This study provides the first evidence for a strong influence of epidemiology and ethnicity on the systemic phenotype at diagnosis of primary SjS

Disclosure of Interest: None declared

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OP0121

LUPUS ANTICOAGULANT IS ASSOCIATED WITH THROMBOTIC EVENTS IN HEALTHY CARRIERS: RESULTS FROM A PROSPECTIVE LONGITUDINAL STUDY

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Background: Antiphospholipid syndrome (APS) is an autoimmune disease characterised by thrombotic events and/or pregnancy morbidity in combination with persistent positivity for antiphospholipid antibodies (aPL) [lupus anticoagulant (LA), anticardiolipin (aCL), anti b2 glycoprotein I (anti-β2GPI) in medium/high titers]. These antibodies could be identified not only in other pathological