criteria. The incidences of RA, PsA and PMR seem to be similar to those reported in previous study[1–3].

References:
[1] Alamanos Y, Voulgari PV., Drosos AA. Incidence and Prevalence of Rheumatoid Arthritis, Based on the 1987 American College of Rheumatology Criteria: A Systematic Review. Semin Arthritis Rheum 2006;36:182–8.
[2] Catanoso M, Pipitone N, Salvarani C. Epidemiology of psoriatic arthritis psoriasis. Reumatismo 2012;64:66–70.
[3] Raheel S, Shbeeb I, Crowson CS, Matteson EL. Epidemiology of Polymyalgia Rheumatica 2000–2014 and Examination of Incidence and Survival Trends over 45 Years: A Population Based Study. Arthritis Care Res (Hoboken) 2016; [Epub ahead of print].

Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.4378

FRI0704 ANALYSIS OF RISK FACTOR FOR PREGNANCY OUTCOMES IN 142 PREGNANCIES COMPLICATED WITH CONNECTIVE TISSUE DISEASE

H. Shimada[1], K. Kanenishi[2], T. Kameda[1], M. Izumikawa[1], S. Nakashima[1], H. Ozaki[1], R. Wakiya[1], A. Kondo[1], N. Kadowaki[1], H. Dobashi[1]. *[1]Department of Internal Medicine, Division of Hematology, Rheumatology and Respiratory Medicine; [2]Department of Perinatology and Gynecology, Faculty of Medicine, Kagawa University, Kagawa, Japan*

Background: Recently, many connective tissue disease (CTD) patients wish to become a mother because immunosuppressants and biologics enable to improve the outcome of underlying CTD and quality of life respectively. However, Pregnancies in CTD patients often have problems including underlying disease exacerbation, some complications during pregnancy especially in preterm birth, light for date (LFD) and premature rapture of membrane (PROM). Previous study identified that high clinical activities with hypocomplementemia and positive anti-dsDNA antibody were at highest risk for pregnancy loss and preterm delivery in SLE[1)]. It is unclear whether these problems are associated with the activity of underlying CTD or immunosuppressant treatment.
Objectives: We examine the issue of pregnancy and delivery complicated with CTD by the analysis of the cases in our institution.
Methods: We investigated the risk factors of preterm birth, LFD (light for dates) and perinatal complication from exacerbation of underlying disease, anti SS-A antibody, antiphospholipid antibody, doses of corticosteroid, immunosuppressants or biologics before pregnancy in 142 cases which were delivered in our institution.
Results: In 23 among all cases underlying diseases were exacerbated, and these occurred more often in PM/DM (60%), MCTD (33.3%), RA (15.3%) and SLE (13.3%). In SLE, SS, MCTD and PM/DM, preterm births and LFD were closely related to disease exacerbation and dose of corticosteroid, pulse therapy, and these were extracted as risk factors for these perinatal complications. Preterm birth was also associated with low complement (CH50) and high titer of anti-dsDNA antibody, and LFD was associated with high titer of anti-dsDNA antibody before pregnancy. However, there was no significant association with these factors in threatened premature delivery and PROM. In RA, perinatal complications were not influenced by methotrexate and biologics before pregnancy. However, only LFD was related with doses of corticosteroid during pregnancy.
Conclusions: We extracted disease exacerbation and dose of corticosteroid, pulse therapy during pregnancy and also low complement, high titer of anti-double stranded DNA antibody before pregnancy as risk factors of pregnancy outcomes. In pregnancy complicated with CTD, we need to control the disease activity strictly, however, we should consider the increase or pulse therapy of corticosteroid carefully.

References:
[1] Clowse ME, Maqder LS, et al. The clinical utility of measuring complement and anti-dsDNA antibodies during pregnancy in patients with systemic lupus erythematosus. J Rheumatol. 2011 Jun; 38(6):1012–6.

Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.5662

FRI0705 PROGRESSION OF CHRONIC DAMAGE IN SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS AFTER 5-YEAR FOLLOW-UP: DATA FROM A LARGE MONOCENTRIC COHORT

I. Leccese, F. Ceccarelli, C. Perricone, L. Massaro, E. Cipriano, S. Truglia, F. Miranda, F.R. Spinelli, C. Alessandri, G. Valesini, F. Conti. *Lupus Clinic, Reumatologia, Dipartimento di Medicina Interna e Specialità Mediche, Sapienza Università di Roma, Rome, Italy*

Background: The prevention of chronic damage represents one of the most important target in the management of patients affected by Systemic Lupus Erythematosus (SLE). About 50% of patients develop chronic damage, especially in the early disease phase, due to disease activity, treatment adverse events and comorbidities. Longitudinal studies demonstrated a progressive increase of damage, evaluated by using SLICC Damage Index (SDI).
Objectives: Moving from these evidences, we aimed at evaluating the progression of chronic damage in a monocentric SLE cohort with at least 5-year follow-up and identifying the factors associated with damage progression.
Methods: We analyzed 658 SLE patients diagnosed according to the ACR 1997 revised criteria, referring to a dedicated outpatient clinic. For the present analysis, we evaluated only patients with a minimum follow-up of 5 years and at least one visit per year. Clinical and laboratory data were collected in a standardized, computerized and electronically-filled form, including demographics, past medical history, comorbidities and concomitant treatments. In all patients, chronic damage was determined by using SDI, with the evaluation of 12 organ systems. Disease activity was evaluated by SLEDAI-2K. Furthermore, we calculated the number of flares during the follow-up, defined as an increase in SLEDAI-2K score $\geq$4 from the previous visit, with a minimum interval of 2 months between visits.
Results: According with the inclusion criteria, we analyzed data deriving from 198 SLE patients (17 M/181 F, mean±SD age 46.8±12.1 years, mean±SD disease duration 131±99.7 months). At the first visit 60 patients (30.3%) showed SDI$>$0; in particular SDI=1 was identified in 65%, SDI=2 in 18.3%, SDI=3 in 10%, SDI=4 in 6.7%). At baseline, the presence of chronic damage was significantly associated with age ($P<0.0001$) and disease duration (P=0.001). After 5 years, we registered the progression of chronic damage in 69 patients (34.8%), with a significant increase of SDI values (baseline: median SDI 0.0, IQR 0–1; follow-up SDI: median 0 IQR 0–2, P=0.009). SDI progression resulted significantly more frequent in subjects with damage at baseline (55.0%) in comparison with free-damage patients (26.1%, P=0.0001, Fisher exact test). The progression of chronic damage was significantly associated with neuropsychiatric involvement (P=0.01), disease activity in terms of number of flares during the 5-year follow-up (P=0.001), concomitant anti-phospholipid syndrome (P=0.02) and arterial hypertension (P=0.001).
Conclusions: In our study, we observed a progression of chronic damage in almost 30% of SLE patients after 5 years. In particular, the presence of previous chronic damage seem to be a risk factor for new damage development. Moreover, the lack of disease control and the presence of comorbidities allows damage progression. Taken together, the results of this study underline the need of a better management of SLE patients in order to prevent damage accrual.

Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.6644

FRI0706 HLA-DRB1 ALLELES ARE ASSOCIATED WITH MARKERS OF ENDOTHELIAL INJURY IN FIRST-DEGREE RELATIVES OF RHEUMATOID ARTHRITIS PATIENTS

J.M. Hughes-Austin[1], M. Corr[2], G.S. Firestein[2], V.M. Holers[3], K.D. Deane[3], J.M. Norris[4], J.H. Ix[5,6]. *[1]Orthopaedic Surgery; [2]Rheumatology, Allergy, Immunology, UC San Diego, la Jolla; [3]Rheumatology; [4]Colorado School of Public Health, University of Colorado, Aurora; [5]Medicine, UC San Diego; [6]Nephrology, VA San Diego, la Jolla, United States*

Background: Rheumatoid arthritis (RA) patients experience higher cardiovascular disease (CVD) risk and CVD-related mortality. MHC class II HLA-DRB1 alleles, or the shared epitope (SE), has also been linked to endothelial dysfunction in RA patients. It is not known whether this association exists in individuals who are RA-free, but who are at higher risk due to being a first-degree relative (FDR) of an RA patient.
Objectives: To determine the association between HLA-DRB1 alleles (*0401, *0404, *0405, *0408) and markers of endothelial injury in FDRs of RA patients, a population free of RA and RA-related medications.
Methods: From the Studies of the Etiology of RA, SERA, (a multicenter prospective study of preclinical RA, started in 2002), 113 FDRs who had been positive for any of 5 RA-related autoantibodies (Abs): rheumatoid factor (RF), RF isotypes – IgM, IgG, IgA, or anti-cyclic citrullinated peptide (anti-CCP2) on at least one of their visits, and 100 FDRs who had never been Ab positive were selected, frequency matched on age, sex, and field center site. No FDR met the 1987 ACR Criteria or 2010 EULAR/ACR Criteria for RA. In cross-sectional testing of single samples from baseline, the following were measured: endothelial injury markers: soluble intracellular adhesion molecule-1 (sICAM), soluble vascular cell adhesion molecule-1 (sVCAM) and E-selectin; and high resolution HLA-DRB1 typing for the*0401, *0404, *0405, and *0408 alleles using real-time polymerase chain reaction. ANCOVA was used to evaluate associations between HLA-DRB1 alleles, sVCAM, sICAM, and E-selectin, adjusting for age, sex, race, body mass index (BMI), Ab status, ever smoking, and current statin use.
Results: Among 213 FDRs, age was 50±18 yr, BMI was 27±6, 75% were women, 83% were Caucasian, 35% ever smoked, 11% were currently taking statins, and 38% were SE positive. sVCAM was significantly higher by 135ng/mL in FDRs with the HLA-DRB1*0404 allele (p=0.009) compared to FDRs without the *0404 allele (Table 1). E-selectin was higher by 23ng/mL in FDRs with the HLA-DRB1*0405

Table 1. Differences in levels of endothelial injury markers by HLA-DRB1 alleles in FDRs of RA patients

	n (%)	ICAM (ng/mL)	p-value	VCAM (ng/mL)	p-value	E-selectin (ng/mL)	p-value
SE Positive	81 (38)	11.6 (8.8)	0.19	55.7 (32.5)	0.09	3.7 (2.2)	0.09
401	55 (26)	2.6 (10.0)	0.80	-14.1 (37.0)	0.70	0.4 (2.5)	0.86
404	23 (11)	21.1 (13.9)	0.13	135.4 (50.9)	0.009	6.4 (3.4)	0.06
405	2 (1)	55.1 (44.0)	0.21	186.0 (163.1)	0.26	22.9 (10.8)	0.03
408	6 (3)	-6.6 (25.4)	0.79	7.1 (94.1)	0.94	8.1 (6.2)	0.19

*n=213 (92 Ab+, 121 Ab–).

allele (p=0.03) compared to FDRs without the *0405 allele. Being positive for the SE was not significantly associated with sICAM, sVCAM, or E-selectin levels.
Conclusions: In RA-free FDRs, having an HLA-DRB1*0404 or HLA-DRB1*0405 allele was associated with markers of endothelial injury. Therefore, the genetic predisposition to RA could contribute to parallel development of atherosclerosis during the preclinical period of RA.
References:
[1] Gonzalez-Juanatey C et al., Am J Med 2003; 114:647–52.
[2] Gonzalez-Gay MA et al., Arth Rheum 2007; 57(1):125–132.
[3] Gersuk VH et al., J Immunol Methods. 2006 Dec 20; 317(1–2): 64–70.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.4570

FRI0707 DRUG LEVELS AND ANTIDRUG ANTIBODIES IN THE DEVELOPMENT OF PARADOXICAL PSORIASIS AND PALMOPLANTAR PUSTULOSIS

J. Ruwaard[1], E. van der Vlugt[1], P. Brevet[1], L. Berkhout[2], T. Rispens[2], M. Nurmohamed[1], G.J. Wolbink[1,2]. [1]*Amsterdam Rheumatology and immunology Center | Reade;* [2]*Department of Immunopathology, Sanquin Research and Landsteiner Laboratory Academic Medical Centre, Amsterdam, Netherlands*

Background: The pathogenesis of psoriasis and palmoplantar pustulosis induced by Tumor Necrosis Factor inhibitors (TNFi) is largely unknown. Only one study, in 9 inflammatory bowel disease patients, investigated the relation with infliximab drug levels in the development of psoriasis or palmoplantar pustulosis and demonstrated no relation with of trough concentrations in these events (1). However, psoriasis and palmoplantar pustulosis were not studied separately.
Objectives: To study the differences in drug levels and antidrug antibodies (ADA) of TNFi in rheumatoid arthritis (RA) and ankylosing spondylitis (AS) patients who developed de novo psoriasis, palmoplantar pustulosis and those who did not develop skin adverse events.
Methods: In this retrospective study data was collected from the observational cohorts of Reade of consecutive RA and AS patients in whom TNFi was started. At every visit, serum samples were collected. We quantified the samples before/on time of event of the patients who developed psoriasis or palmoplantar pustulosis, for the patients with no skin adverse events (control group) at 24 or 28 weeks. Drug levels and ADA were measured with an Enzyme-linked immunosorbent assay and antibody binding test respectively.
Results: A total of 830 TNFi naive patients with RA and AS were included, of whom 21 developed psoriasis (n=11) or palmoplantar pustulosis (n=10). These patients were only observed in the adalimumab and etanercept cohorts. Sixteen patients with an event and 585 patients in the control group had serum samples available to quantify drug levels and ADA. No statistical significant differences were found in drug levels of adalimumab and etanercept for both RA and AS patients (table 1). Moreover, no statistical significant differences were observed in the detection of ADA between the three groups. However, no ADA were detected in patients who developed psoriasis or palmoplantar pustulosis compared to the overall 13.9% of the RA patients and 25.5% in AS patients.

Table 1. Differences in drug levels and detection of anti-drug antibodies between palmoplantar pustulosis, psoriasis and control group

		Druglevels adalimumab (μg/ml; median (IQR)		Drug levels etanercept (μg/ml); median (IQR)		Anti-drug antibodies adalimumab, no. (%)
RA						
Palmoplantar pustulosis	n=3	7,6 (0,01–12,0)	n=1	4,4	n=3	0 (0)
Psoriasis	n=3	8,5 (6,5–10,0)	n=2	2,3 (1,5–3,1)	n=2	0 (0)
Control group	n=153	7,4 (4,0–10,0)	n=89	2.7 (1.9–3.9)	n=151	21 (13,9)
p-value		0,992		0,380		0,674
AS						
Palmoplantar pustulosis	n=3	9,0 (6,5–10,0)	n=1	1,7	n=3	0 (0)
Psoriasis	n=1	10, 0	n=2	1,3 (0,8–1,7)	n=1	0 (0)
Control group	n=46	8,5 (3,7–11,3)	n=99	2.6 (1.4–4.0)	n=47	12 (25,5)
p-value		0,754		0,406		0,754

RA: rheumatoid arthritis; AS: ankylosing spondylitis; Control group: patients who did not develop skin adverse events; IQR: interquartile range; no. number of patients. p-value <0,05 was considered statistically significant.

Conclusions: Patients who develop paradoxical psoriasis and palmoplantar pustulosis have adequate drug levels and no ADA were detected.
References:
[1] J Crohns Colitis 2015 Nov;9(11):982–7.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.3635

FRI0708 NEUROPATHIC PAIN IS A WEAK PREDICTOR OF NEW ONSET CHRONIC WIDESPREAD PAIN

J. McBeth[1], M. Mulvey[2], A. Rashid[1], J. Anderson[1], K. Druce[1]. [1]*Arthritis Research UK Centre for Epidemiology, The University of Manchester, Manchester;* [2]*Leeds University, Leeds, United Kingdom*

Background: Regional pain (e.g. back pain) predicts incident chronic widespread pain (CWP), the clinical hallmark of fibromyalgia. Up to 20% of patients with CWP have neuropathic pain (NP). People with CWP and NP report similar pain characteristics including allodynia (pain in response to normal touch), have common risk factors (age, sex, body mass index, smoking and socioeconomic status) and a shared genetic predisposition. Whether NP is a risk factor for CWP is not known.
Objectives: To test the hypothesis that among persons free of CWP, NP would increase the risk of developing CWP.
Methods: In a population based study participant's pain reports were coded and those free of CWP (ACR criteria: pain lasting ≥3 months in the axial skeleton and contralateral body quadrants) identified. Participants also completed the Douleur Neuropathique 4 (DN4) (which has 7 sensory descriptors of pain (burning, painful cold, electric shocks, tingling, pins and needles, itching, and numbness), scores ≥3 indicating NP); demographics (date of birth, sex, English Index of Multiple Deprivation, occupational status); Hospital Anxiety and Depression (HAD) scale; Estimation of Sleep Problem Scale (ESPS); self-reported pain medications (summed to give a total count); and signed consent. Participants were classified as no pain, having some pain that wasn't neuropathic (NP-; DN4 score <3), or neuropathic pain (NP+; DN4 score ≥3). A follow-up questionnaire mailed 12 months later gathered pain data using the methods in the baseline survey. Based upon their pain reports at follow up participants were classified as "new CWP" for those who reported pain that satisfied the criteria for CWP, or "not CWP". Logistic regression estimated the odds of developing new CWP in the NP-, and NP+ groups compared to the no pain group. Results were expressed as odds ratios (OR) with 95% confidence intervals (CI). Population attributable fractions (PAF) estimated the % of new CWP that would be avoided if participants were not exposed to NP- or NP+.
Results: A total of 1162 participants who were free of CWP, completed the DN4 and provided pain data at follow up. Of those 523 (45.0%) had no pain at baseline, 562 (48.4%) had NP- and 77 (6.6%) had NP+. New onset CWP was reported by 153 (13.2%) participants; 19 (3.6%) of the no pain group, 108 (19.2%) of the NP- group, and 26 (33.8%) of the NP+ group. After adjusting for age and sex, compared to the no pain group, the NP- group was 3 times (OR 2.9, 95% CI (2.0, 4.2)) and the NP+ group 4 times (3.9 (2.3, 6.4)) more likely to have new CWP at follow up. These relationships were attenuated but persisted after adjustments for demographics, HAD, ESPS and medication use (NP- (2.9 (1.9, 4.3); NP+ (2.1 (1.1, 4.0)). The PAF was 41.3% (95% CI (25.2, 54.0)) for NP- and 6.0% (0.1, 11.6) for NP+. All of the individual DN4 characteristics except painful cold and itching predicted new CWP with PAF's ranging from 1.6% (0.1, 3.8) for pins and needles to 5.0% (1.1, 8.8) for burning.
Conclusions: NP predicts a small number of new onset CWP cases. CWP is highly prevalent in the general population and effective treatment of pain not of NP origin will have a significant impact on population levels of CWP.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.1642

FRI0709 PREVALENCE OF RHEUMATIC DISEASES BASED ON COPCOPRD STUDIES: A SYSTEMATIC REVIEW

J. Moreno-Montoya[1], J. Rodriguez-Amado[2], R. Burgos-Vargas[3], I. Pelaez-Ballestas[3]. [1]*Universidad del Bosque, Bogota, Colombia;* [2]*Research Associate of South Florida, Miami, United States;* [3]*Rheumatology Unit, Hospital General de Mexico, Mexico, Mexico*

Background: Despite many efforts, to date there has been no focused attempt to derive a robust estimate of the prevalence of rheumatic diseases (RDs) to quantify how this is influenced by other factors than them examined in every local study, however, the problems magnitude is rising and due the demographic transition and the increase in the life expectancy
Objectives: To determine, through a systematic review and meta-analysis, the prevalence of RDs in the adult general population and explore its heterogeneity
Methods: MEDLINE, EMBASE, BIREME, LILLACS and Web of Science were searched using a search strategy combining key words and related database-specific subject terms to identify relevant cross-sectional based on COPCORD methodology studies. Also was developed a manual search. Included articles were assessed for risk of bias and quality based on the STROBE statement. Prevalence figures for RDs were analyzed according to female percentage of sampled individuals, mean age and sample size. A mixed effect model was used to obtain the combined prevalence and a meta-regression to estimate the effects of other variables
Results: 44 out from 127 papers were included in English, Spanish or Portuguese. Estimates for any RDs prevalence ranged from 7.2% to 62.3% (26.9%; 95% CI 18.3%>25.6%). For rheumatoid arthritis (RA), the prevalence varied between 0.2% and 6.2% (1.04%; 95% CI 0.4%>1.6%); fibromyalgia (FM) had a mean prevalence of 2.1% (95% CI 1.0%>3.2%) and osteoarthritis: 13.5% (95% CI: 10.6%>16.4%). SLE (systematic lupus erythematosus) was the less frequent condition with average prevalence of 0.14% (95% CI: 0.005%>0.28%). The random-effects pooled prevalence for any RDs was 25% (95% CI: 18.0%, 31.1%). Prevalence was higher in studies with bigger sample size (random effect coefficient: 0.0014, p=002). There was evidence of relevant heterogeneity in the analysis (p<0,001) and for RDs, RA and FM the sample size was positively associated to the perceived heterogeneity. No effects were found for SLE
Conclusions: It was found significant variation among the prevalence across this