Conclusions: Sarcoidosis is associated with an increased risk for ischaemic heart disease and all-cause mortality. Patients with co-morbidity of sarcoidosis and ischaemic heart disease should be treated accordingly.

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SAT0691

ADHERENCE TO DISEASE-MODIFYING DRUGS IN CHRONIC INFLAMMATORY RHEUMATIC DISEASES: SEVERAL QUESTIONNAIRES, DIVERSE PATIENT CHARACTERISTICS AND SOME EFFICACIOUS INTERVENTIONS – A SYSTEMATIC LITERATURE REVIEW

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Background: In chronic inflammatory rheumatic diseases (CIRDs), adherence to disease-modifying drugs (DMD) is only moderate. Non-adherence may lead to complications, unnecessary treatment switches and heightened costs. Physicians are often at a loss when faced with non-adherence.

Objectives: To obtain an overview of how to measure adherence, who to screen particularly (risk factors of non adherence) and interventions to enhance medication adherence to DMD in patients with CIRDs.

Methods: A systematic literature review was performed in Pubmed, Cochrane, Embase and websites in 2017. All english and french studies related to methods to measure non-adherence, risk factors regrouped in 5 domains according to World Health Organisation (patient characteristics, health status, treatments, socio-economic conditions and relations with caregivers and the health system) and interventions for non-adherence regrouped in 5 modalities (educational, behavioural, cognitive behavioural, multicomponent interventions or others) were selected. The scope was limited to CIRDs (i.e., rheumatoid arthritis (RA), spondyloarthritis (SpA), psoriatic arthritis (PsA), crystal-induced arthritis (CIA), connective tissue diseases (CTD), vasculitis and auto-inflammatory diseases), and to DMD (i.e., mainly conventional DMARDs, biologics and targeted synthetic DMARDs).

Results: After screening 1131 publications and 194 other documents, 231 relevant papers were analysed for measuring adherence (60% in RA, 8% in SpA, 6% in PsA, 11% in CIA and 15% in CTD), 117 for predicting non-adherence (55% in RA, 9% in SpA, 14% in gout and 22% in CTD) and 22 for improving adherence (72% in RA, 8% in SpA, 16% in systemic lupus and 4% in gout). Objective measurements of non-adherence included: delivery data (total number of use: n=92), pill counts (n=8), medication event monitoring system (n=9), blood level assessments (n=7). Subjective measurements included: patient global assessment (n=57), and 4 questionnaires. The most used questionnaire was the Morisky Medication Adherence Scale and the most widely validated in rheumatology were the Compliance Questionnaire on Rheumatology and the Medication Adherence Self-report Inventory. Around 100 predictive factors were identified. Polymedication, mood disorders, lack of information and poor physician-patient relationship were associated with lower adherence. Regarding management options for non-adherence, 13/22 studies were randomised controlled trials (1535 patients) and only 5 (38%) were positive (774 patients). Educational interventions were the most represented with the highest level of evidence: 8/13 trials (1017 patients) with 4/8 yielding positive results.

Conclusions: Despite the importance of medication adherence in CIRDs, this review revealed limitations in methods to measure non-adherence, a multiplicity of non-adherence risk factors and a relative lack of evidence on interventions to improve medication adherence. It's important to improve the assessment and optimisation of adherence in CIRDs.

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SAT0692

BREASTFEEDING IS NOT ASSOCIATED WITH ANTI-CITRULLINATED ANTIBODIES DEVELOPMENT IN INDIVIDUALS AT RISK FOR RHEUMATOID ARTHRITIS

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Background: 'Systemic autoimmunity associated with rheumatoid arthritis' (RA), is a pre-clinical stage preceding the onset of clinical RA, characterised by the presence of autoantibodies, such as anti-citrullinated protein antibodies (ACPA) or anti-carbamylated protein antibodies (antiCarP). Breastfeeding has been proposed as a protective factor for RA development,¹ but there are some controversies.² To establish the causal role of a putative risk factor, longitudinal studies are needed, in particular in the pre-stages of RA development.

Objectives: To study the association between breastfeeding and the development of systemic autoimmunity associated with RA.

Methods: This ongoing prospective study includes individuals genetically at risk of developing RA, namely first-degree relatives of RA patients (RA-FDR). Individuals without clinical evidence of RA were enrolled, and assessed yearly clinically and biologically. We included all RA-FDR women with available ACPA status (anti-CCP 2, 3.1 or 3.0) and information about breastfeeding. The primary outcome was ACPA positivity. The exposure of interest was breastfeeding and duration of breastfeeding (categorised as 0, 1–7 and ≥7 months). The presence of antiCarP was a secondary outcome. We used logistic regression to analyse univariable and multivariable associations.

Results: A total of 882 women were included, of which 57 (6%) were ACPA positive. The characteristics of ACPA positive and negative participants were balanced, except for an older age in ACPA positives (median 52 versus 45 years; table 1). In the univariable analysis, ACPA positivity was not significantly associated with breastfeeding (OR 1.5, p=0.16) or with breastfeeding duration (OR=1.8, p=0.14). In the multivariable analysis adjusted by age, smoking, number of pregnancies and years of education, there was a weak, but not significant, association between breastfeeding for more than 7 months and ACPA positivity (OR 2.16, p=0.10). Among 728 women with available antiCarP results, 70 (10%) were positive, of which 27 (40%) breastfed. Breastfeeding for more than 7 months was not significantly associated with antiCarP in univariable or multivariable analyses (OR 1.3, p=0.52 and OR 1.9, p=0.16, respectively).

Abstract SAT0692 – Table 1. General characteristics of RA-FDR women, n=882

Table 1. General characteristics of RA-FDR women, n=882		
	ACPA (+) 57 (6%)	ACPA (-) 825 (94%)
General characteristics		
Age, years, median (IQR)	52 (47-60)	45 (34-54) *
Education, years, median (IQR)	14 (13-16)	14 (13-15)
Caucasian, n(%)	51 (90)	770 (93)
Body mass index, kg/m ² , median (IQR)	24 (21-27)	23 (21-26)
Ever smoking, n(%)	32 (56)	378 (46)
Alcohol consumption, n (%)	43 (75)	651 (79)
Rheumatoid factor, n(%)	11 (19)	123 (15)
Reproductive characteristics		
Parous women, n(%)	38 (67)	465 (56)
Number of pregnancies, median (IQR)	2 (2-2)	2 (2-2)
Breastfeeding, [yes/no] n(%)	31 (54)	371 (45)
Breastfeeding, months, median (IQR)	1 (0-4)	0 (0-3)
0 month	26(46)	455(55)
1-7 months	22(39)	284(34)
≥7 months	9 (16)	86(10)

*p-value <0.05, univariable logistic regression.

Conclusions: Among women at risk of RA, breastfeeding was not associated with the presence of ACPA or anti-CarP. Our results do not support a protective role of breastfeeding in the development of systemic autoimmunity associated with RA.

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SAT0693 GENETIC POLYMORPHISMS AND EFFICACY OF METHOTREXATE IN RHEUMATOID ARTHRITIS

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Background: Methotrexate (MTX) is the DMARD of choice in the treatment of rheumatoid arthritis (RA). There is important variability in its therapeutic response. The identification of genetic factors related to the absorption, metabolism and action of MTX may facilitate a more efficient use.

Objectives: To study the effect of clinical characteristics and different single nucleotide polymorphisms (SNPs), related to the transport and metabolic pathways of MTX, on the therapeutic response of MTX in monotherapy in RA patients.

Methods: Observational study. Outcome variable: response to MTX (DAS-PCR <3.2). Study factors: SNPs of transport (ABCB1 C3435T), glutamation (GGH T16C and FPG G2782A), transmethylation (MTHFR C677T and MTHFR A1298C) and adenosine (AMPD1 C34T, ADA A534G, ITPA C94A). The association between SNPs and therapeutic response was analysed by logistic regression, assessing the allele independence (Hardy-Weinberg equilibrium) and interaction by sex. Different models of SNPs inheritance were analysed. Models were adjusted by the characteristics of the patient, of disease and of treatment. The haplotypes of the MTHFR SNPs (C677T and A1298C) were also analysed.

Results: Bivariate analysis showed lower probability of response with smoking (OR=0.37), erosions (OR=0.26), Mantoux (OR=0.20), disease activity (OR=0.08), previous DMARDs (OR=0.46) and doses of folic acid (OR=0.97), MTX (OR=0.87) and prednisone (OR=0.93), with higher response at a higher age at diagnosis (OR=1.05). In relation to the SNPs, the C/A genotype of the ITPA_C94A decreases the probability of response (OR=0.48) according to an overdominant inheritance model, and the C/C genotype of MTHFR_A1298C is also associated with a lower response according to a model of recessive inheritance (OR=0.18). An interaction between the GGH_T16C SNP and sex was observed, so that the C/C genotype increases the possibility of response in women (OR=2.95), but not in men.

In the adjusted models, only the effect of genotype C/C of MTHFR_A1298C is maintained (OR=0.14), irrespective of age, sex, smoking, alcohol, RF, anti-CCP, erosions, extra-articular manifestations, Mantoux, DAS28-CRP, previous

DMARDs, time to MTX, doses of folic acid, prednisone, MTX and route of administration. On the contrary, the association between the ITPA_C94A polymorphism and the response was not maintained nor the interaction effect of the C/C genotype of GGH_T16C observed in bivariate analysis. Finally, the CC haplotype of the combination MTHFR C677T and MTHFR A1298C is associated with a decrease in the response (OR=0.55) in the adjusted models, so it is an effect independent of the control variables. No interaction effects were observed by sex.

Conclusions: Genetic polymorphisms related to the transport and metabolism of MTX have little effect on the therapeutic response, or at least much lower than other patient (smoking), disease (activity, erosions), or treatment (number of previous DMARDs) characteristics.

Disclosure of Interest: None declared

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SAT0694 DETERMINANTS OF TRAJECTORIES OF MULTI-SITE PAIN IN KNEE OSTEOARTHRITIS: A 10.7-YEAR PROSPECTIVE STUDY IN OLDER ADULTS

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Background: Pain in osteoarthritis (OA) is very common especially in elderly and commonly occurs at multiple sites. Multi-site pain (MSP) has been shown to be associated with more severe symptoms and worse health-related quality of life compared to single-site pain. Limited evidence exists about understanding the course of MSP and its determinants.

Objectives: To identify distinct trajectories of MSP over 10.7 years in an older population, and to examine risk factors for identified trajectories.

Methods: 1099 participants (mean age 63 years) from the population-based Tasmanian Older Adult Cohort study were recruited at baseline. 875, 768 and 563 participants attended years 2.6, 5.1 and 10.7 follow-up, respectively. Demographic, psychological, lifestyle and comorbidities data were obtained at baseline. Knee radiographic OA was assessed by X-ray at baseline. Group-based trajectory modelling was applied to identify distinct trajectories of MSP. Multi-nominal logistic regression was used for the analyses with adjustment for potential confounders.

Results: Three distinct MSP trajectories were identified: a group of participants with 'no MSP' (11%), a group with 'fluctuating MSP' (38%), and a group with 'persistent MSP' over time (51%). In multivariable analyses with the 'no MSP' trajectory as reference, emotional problems and comorbidity were significantly associated with both 'fluctuating MSP' and 'persistent MSP' trajectory. In addition, female sex, being obese and radiographic knee OA predicted the trajectory of 'persistent MSP' in the whole population. Results were similar with emotional problems (relative risk [RR]: 2.57 for 'fluctuating MSP' and 5.70 for 'persistent MSP', both p<0.05), being obese (RR: 3.80 for 'persistent MSP', p=0.007) and comorbidity (RR: 2.45, p=0.010) in either 'fluctuating MSP' or 'persistent MSP' trajectory in those with radiographic knee OA.

Conclusions: MSP trajectories appear stable once established and can be predicted by factors both peripheral and central in origin.

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SAT0695 HOSPITALISATION RATES AMONG PATIENTS WITH PRIMARY SJÖGREN'S SYNDROME: A POPULATION-BASED STUDY, 1995–2016

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Objectives: To determine rates and primary discharge diagnoses of hospitalisation in a cohort of patients with incident primary Sjögren's syndrome (pSS) compared to the general population.

Methods: This was a retrospective population-based cohort study focused on Olmsted County, Minnesota. The pSS cohort consisted of patients with incident pSS in the 1976–2015 period and was compared with a cohort of individuals without pSS matched 3:1 for age, sex and calendar year, randomly selected from the same population. Hospitalizations in 1995–2016 were examined. Discharge diagnoses were categorised using the Clinical Classifications Software for ICD-9-CM.

Results: A total of 385 hospitalizations occurred in the 160 patients with pSS during 1592 person-years of follow-up. Among 466 comparators, there were 899 hospitalizations during 4660 person-years of follow-up, resulting in a significantly higher rate of hospitalizations in patients with pSS (rate ratio [RR]:1.25, 95% CI:1.11–1.41). Rates of hospitalisation were increased among patients with pSS for endocrine, nutritional and metabolic diseases and immunity disorders