Mitsubishi, Chugai, Teijin Pharma, Torii, Nippon Shinyaku, Pfizer. UCB. Nippon Kayaku, YL biologics, Bayer and Bristol-Meyers., Consultant for: MSD, Ayumi, AbbVie, Eisai, Ono, Astellas, Daiichi-Sankyo, Taisyo-Toyama, Takeda, Tanabe-Mitsubishi, Chugai, Teijin Pharma, Torii, Nippon Shinyaku, Pfizer. UCB. Nippon Kayaku, YL biologics, Bayer and Bristol-Meyers., Speakers bureau: MSD, Ayumi, AbbVie, Eisai, Ono, Astellas, Daiichi-Sankyo, Taisyo-Toyama, Takeda, Tanabe-Mitsubishi, Chugai, Teijin Pharma, Torii, Nippon Shinyaku, Pfizer. UCB. Nippon Kayaku, YL biologics, Bayer and Bristol-Meyers.
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SAT0146 AT DIAGNOSIS OF RHEUMATOID ARTHRITIS, AT-RISK PATIENTS FOLLOWED IN CCP+ CLINIC SHOWED Milder DISEASE ACTIVITY THAN CONVENTIONALLY REFERRED PATIENTS.

L. Duquenne^{1,2,*}, P. Pentony^{1,2}, K. Mankia^{1,2}, J. Nam^{1,2}, L. Hunt^{1,2}, A. L. Tan^{1,2}, L. Garcia-Montoya^{1,2}, P. Emery^{1,2}. ¹Leeds Institute of Rheumatic and Musculoskeletal Medicine, University of Leeds, ²NIHR Leeds Biomedical Research Centre, Chapel Allerton Hospital, Leeds, United Kingdom

Background: Early treatment of rheumatoid arthritis (RA) improves clinical and radiological outcomes¹. Risk stratification models can identify patients at high risk of developing RA,²⁻⁵ which may lead to an extension of the window of opportunity. Whether identifying and following at-risk individuals improves outcomes after the development of RA however is yet to be determined.

Objectives: The hypothesis is that patients followed in a specific at-risk clinic will have less severe disease at diagnosis than those referred via the conventional route if/when they develop RA.

Methods: In two single-centre prospective observational cohorts, patients fulfilling the 2010 EULAR classification criteria for RA were compared on a demographic and clinical approach. The first group was composed of 59 patients positive for anti-cyclic citrullinated protein antibodies (CCP) with non-specific musculoskeletal symptoms, considered to be "at-risk of RA", who were followed until RA diagnosis. The second group was composed of 92 CCP positive RA patients referred to a standard 'Early Arthritis' rheumatology clinic.

Results: Demographic data at RA development were consistent between both groups including smoking history and BMI. Immunological features were also similar. CCP titre: at risk median 193U/ml (IQR 41,300), standard care 300U/ml (IQR 81,300, p=0.176). Rheumatoid factor (RF) titre: at risk median 84iU/mL (IQR 15,223), standard care 87iU/mL (IQR18,161, p=0.850). RF positivity: at risk 75%, standard care 70% (p=0.544). High-titre CCP blood levels: at risk 95%, standard care 97% (p=0.566).

As shown in table 1, DAS28CRP score were significantly lower in the at risk group than in standard care, this was due to a difference in the general health Visual Analogue Scale score and the CRP levels. Patients in the at risk group also had fewer swollen large joints and reported significantly shorter time between onset of subjective joint swelling and diagnosis. There was no difference between the presence of erosions on ultrasound scans (at risk: 39%, standard care 38%, p=0.921).

	At Risk of RA*	Standard care*	P-value
Age mean (SD)	55.3 y (12.6)	56.4 y (19.1)	0.711
Women	73%	71%	0.815
BMI mean (SD)	28 (5.4)	27 (6.5)	0.299
Ever smoker	70%	55%	0.075
DAS28CRP	3.9 (3.2,4.6)	4.9 (3.4,5.6)	0.003
TJC28	5 (3.9)	7 (2,14)	0.447
SJC28	2 (1.5)	4 (2,9)	0.001
GH VAS	41 (18,64)	57 (37,75)	0.003
CRP	5.4 (0,11)	26 (18,49)	0.000
HAQ	10 (2,17)	12 (5,20)	0.197
Large joint swelling mean (SD)	0.14 (0.4)	0.39 (0.7)	0.014
Weeks before subjective swelling to RA diagnosis	6 (2,12)	29 (16,52)	0.00

*Median (IQR) unless specified

Conclusions: Patients who were diagnosed with RA while being followed in an at-risk cohort had milder disease activity and less pain than those diagnosed through standard referral despite equivalent demographics and serology. This reflects an earlier diagnosis and hence shorter exposure to inflammation. Follow-up will be required to see if these differences convert to long-term benefits.

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SAT0147 PRESENCE OF HEPATITIS B VIRUS IN SYNOVIUM AND ITS CLINICAL SIGNIFICANCE IN RHEUMATOID ARTHRITIS

L.-J. Yang¹, Y.-L. Chen¹, J. Jing¹, Y.-Q. Mo¹, J.-D. Ma¹, L.-F. Chen¹, J.-Z. Lin¹, Z.-H. Yang², T. Yan³, D.-H. Zheng¹, F. Pessler^{4,5}, L. Dai¹. ¹Department of Rheumatology, ²Department of Radiology, Sun Yat-sen Memorial Hospital, Sun Yat-sen University, ³Zhongshan School of Medicine, Sun Yat-sen University, Guangzhou, China, ⁴TWINCORE Center for Experimental and Clinical Infection Research, Hannover, ⁵Helmholtz Center for Infection Research, Braunschweig, Germany

Background: Previous studies have shown that hepatitis B virus (HBV) infection may be associated with rheumatoid arthritis (RA). However, no study regarding the presence of HBV in the synovial membrane from RA patients has been reported.

Objectives: To investigate the presence of HBV in RA synovium and determine its influence on histopathological characteristics of synovitis as well as clinical and radiographic outcomes in RA.

Methods: 57 consecutive patients with active RA (DAS28-CRP≥2.6) and qualified synovium (at least 6 pieces of synovial tissues per patient, containing lining layer and sublining area) obtained by closed Parker-Pearson needle biopsy who had completed one year follow-up were retrospectively recruited from a prospective RA cohort (n=239). The patients were divided into chronic HBV infection (CHB, positive HBsAg and/or HBV DNA in serum persisting for over 6 months; n=11), resolved HBV (negative HBsAg and HBV DNA in serum, but positive anti-HBc; n=22), and non-HBV (negative HBsAg, HBeAg, anti-HBe, anti-HBc, and HBV DNA in serum, regardless of anti-HBs; n=24) groups according to baseline HBV infection status. Clinical data were collected at baseline and follow-up visits at months 1, 3, 6, and 12. Radiographic assessments of hand/wrist at baseline and month 12 were performed with the Sharp/van der Heijde-modified sharp score (mTSS). Serial tissue sections were stained immunohistochemically for HBsAg, HBeAg, CD3, CD15, CD20, CD34, CD38, and CD68. Nested PCR was used to detect HBV S gene DNA in synovium.

Results: Immunohistochemical staining and nested PCR revealed the presence of HBcAg and S gene DNA in the synovium from RA patients with CHB (figure 1). Compared with the non-CHB group (n=46), significantly more CD15-positive neutrophils, CD20-positive B cells, and CD68-positive macrophages infiltrated the CHB synovium (all p<0.05), together with smaller improvements from baseline in most disease activity indicators mainly at month 12. A significantly higher percentage of CHB patients experienced one-year radiographic progression (Δ mTSS≥0.5units/year, 64% vs. 26%, p=0.024). Multivariate logistic regression analysis showed that CHB status (OR: 14.230, 95%CI: 2.213–95.388; p=0.006) and the total count of CD68-positive macrophages (OR: 1.002, 95%CI: 1.001–1.003; p=0.003) were independently associated with one-year radiographic progression.

Figure 1 Identification of HBV in RA synovium. (A) Representative immunohistochemical staining for HBcAg in RA synovium. Representative images illustrated detection of HBcAg in a RA patient with CHB, but not in RA patients with resolved HBV or no infection. **(B) Representative staining of HBcAg in one RA patient with CHB compared to stains for CD38 and CD68.** Serial sections of synovium from one RA patient with CHB were stained with H&E and immunohistochemically. HBcAg immunoreactivity was

observed in the sublining inflammatory cells including plasma cells (CD38+) and macrophages (CD68+), mainly located in the cytoplasm. (C) **Detection of HBV S gene in RA synovium by nested PCR.** Nested PCR showed HBV S gene only in all four CHB synovial tissues. Liver tissue from a patient with HBV-related hepatocellular carcinoma was used as positive control.

Conclusions: Our results reveal definite presence of HBV in the synovium which may be involved in the pathogenesis of local lesion and exacerbate disease progression in RA patients with CHB.

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SAT0148 ORAL CARE AND HEALTH IN RHEUMATOID ARTHRITIS PATIENTS BASED ON A SELF-ASSESSMENT QUESTIONNAIRE INVESTIGATION

L. L. Strandbygaard¹, M. Radwan-Oczko², I. Dus², A. M. Thomsen¹, K. Schmökel³, C. Rasmussen¹. ¹Department of Rheumatology, North Jutland Regional Hospital, Hjørring, Hjørring, Denmark, ²Department of Oral Pathology, Wrocław Medical University, Wrocław, Poland, ³Municipal Pediatric Dental Care & Dental Care for the Impaired, Hjørring, Denmark

Background: Some investigations indicate a higher prevalence of periodontal disease (PD) in rheumatoid arthritis (RA) patients compared to healthy individuals without RA. Significant improvements in clinical parameters and laboratory tests were demonstrated in RA patients following periodontal therapy. Periodontal diseases – gingivitis and periodontitis are inflammatory, multifactorial pathologies of periodontal tissues, which support the teeth. The factor responsible for the inflammation is a plaque with specific bacteria.

In gingivitis, which is the first stage of PD, only gingiva is involved. Then in susceptible patients, periodontitis is developing and the deeper laying structures surrounding the teeth are involved and destroyed. The patients' own observation of gingival bleeding strongly indicates gingival disease.

The effectiveness of oral hygiene, including self-care, in controlling periodontal health is crucial and supported by several studies. RA patients frequently experience reduced function of fingers and wrists that makes oral hygiene troublesome.

Objectives: The purpose of this study was to assess RA patient's oral care and health based on a self-assessment questionnaire.

Methods: Questionnaires were mailed to 300 patients treated for RA in a Danish rheumatology outpatient clinic.

Results: A total of 164 patients completed the questionnaires. The mean age of patients was 65 years, and the average value of DAS28 was 2.31. Twelve percent were active smokers. The "dry mouth" syndrome, as a problem when chewing or swallowing, pointed out 4% of patients. Difficulties in biting or chewing revealed 10% of patients. As much as 87% stated they regularly visit a dentist, min. one time a year.

Regarding self-oral care 15% of patients answered, they brush teeth only once a day. Most of the patients (51%) used manual toothbrush vs electrical – which can be more convenient for patients with problems of the hands/wrists. Only 21% used mouth-rinsing liquid. Difficulties in performing home oral hygiene procedures were reported by 9% when brushing teeth, and by 17% using dental floss or interdental brushes. 11% of responders rated the status of their gingiva as poor. Gingival bleeding spontaneous or related to brushing was experienced by respectively 15% and 49% of patients. No patients stated knowledge of an association between oral health and RA.

Conclusions: The oral care in RA patients, including self-care, seems to require improvement. Providing important information to the patients about the relationship between the oral/periodontal health and RA disease activity should raise the patient's awareness, which may improve the course of the RA disease.

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SAT0149 IS ESTABLISHED SERONEGATIVE RHEUMATOID ARTHRITIS EVEN A MILD FORM OF THE DISEASE?

L. D. Fajardo Hermosillo¹. ¹Rheumatology, Internal Medicine Division, IMSS HGR110, Guadalajara, Mexico

Background: Established Seronegative Rheumatoid Arthritis (SNRA) was considered a mild form of the disease with a good response to therapy on the past¹. Lately evidence indicates this form of arthritis in early stage is serious and should not be underestimated in terms of disease activity and radiographic damage². By other hand early SNRA presents shorter symptoms duration and different response to therapy compare to seropositive (SP) patients^{3,4}. At present, the influence of seronegative (SN) status of clinical course and treatment choice is still controversial. Data of this issue are scarce and often insufficiently powered.

Objectives: To determine demographical, clinical and treatment differences between established SN and SP Rheumatoid Arthritis (RA) in a Mexican cohort.

Methods: 511 patients with established RA (>2 years from time at onset of diagnosis) that fulfilled ACR/EULAR 2010 criteria (≥18 years) from a Mexican cohort from 2012 to 2017 were examined. Patients without presence of rheumatoid factor (RF) and anti-citrullinated protein antibodies (ACPA) were considered SN. Demographic factors, clinical features, disease activity measured using DAS28, functional status, comorbidities and pharmacologic treatments were examined for patients with established SN and SP RA. Charlson's clinical co-morbidity index was used to analyze comorbidities. Chi-square and Student-t test was performed by univariate analysis and logistic regression was used by multivariate analysis, both were adjusted for age and gender. Standard deviation and mean of modified Charlson's index was obtained by ANOVA analysis. Statistical test were conducted at 5% level of significance.

Results: Of 511 patients with established RA 89% were women. The mean age [standard deviation (SD)] was 55.6 (11.8) years. The mean of time at onset of RA (SD) was 12.1 (8.7) years. A total of 77 (15.1%) patients had established SNRA. In the univariable analyses established SNRA patients were more likely to have shorter time at onset of RA, minor disease activity and radiographic progression, lesser extra-articular and sicca manifestations, reduced demand of hip and knee arthroplasty, also present lower comorbidities including osteoporosis and fibromyalgia, besides to use fewer methotrexate and corticosteroids. As expected, the modified Charlson's comorbidity index score was lower in established SNRA patients. No differences were found for use of biologic agents in both groups. In multivariable analyses, minor disease activity (OR 0.33, 95% CI 0.17–0.60, p≤0.001), less frequently use of methotrexate (OR 0.38, 95% CI 0.17–0.82, p=0.014) and minor radiographic progression (OR 0.13, 95% CI 0.40–0.39, p≤0.001), remained significant in established SNRA patients.

Conclusions: This study suggests that established SNRA present less disease activity and radiographic damage as well as fewer use of MTX than established SPRA. However differences in activity disease and response to treatment can be found in early stages of RA not included in this study. Therefore early SNRA cannot be considered to be a generally mild form of the disease like as established SNRA. These observations must be confirmed in larger studies including early stages of RA.

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SAT0150 INADEQUATE CARDIOVASCULAR RISK MANAGEMENT IS NOT RHEUMATOID ARTHRITIS SPECIFIC AMONG PATIENTS WITH PREVALENT RHEUMATIC AND MUSCULOSKELETAL DISEASES

M. Reyskens¹, L. Tsang¹, M. Walschot¹, F. Fleurinck¹, A. O. Solomon², A. Millen², P. Dessein¹. ¹Free University Brussels, Brussels, Belgium, ²Witwatersrand University, Johannesburg, South Africa

Background: Preventive pharmacotherapy for atherosclerotic cardiovascular disease (ACVD) is reportedly underused in patients with rheumatoid arthritis (RA). Whether this shortcoming is RA specific amongst patients with prevalent rheumatic and musculoskeletal diseases (RMD) is currently unknown.

Objectives: This study aimed to compare high ACVD risk profiles and statin use by indication between RA and non-RA patients with RMD.

Methods: We investigated 470 consecutive RMD patients of which 80 had RA, 92 undifferentiated inflammatory/early arthritis (UIA), 127 fibromyalgia and 171