Conclusions: Although moderate-to-heavy alcohol consumption was associated with lower baseline DAS28 in patients, alcohol drinking status was not associated with change in disease activity, as measured by DAS28, at 1-year follow-up.

References:
[1] Di Giuseppe D. BMJ, 2012 Jul 10;345:e4230.
[2] Kallberg H. Ann Rheum Dis, 2009;68:222–7.
[3] Maxwell JR. Rheumatology (Oxford), 2010;49:2140–6.

Disclosure of Interest: Y. Shimizu: None declared, E. Tanaka Consultant for: Abbvie, Eisai Pharmaceutical, Chugai Pharmaceutical, Bristol Myers Squibb, Astellas Pharmaceutical, Pfizer, Takeda Pharmaceutical, and Ayumi Pharmaceutical., E. Inoue: None declared, M. Ochiai: None declared, R. Yamaguchi: None declared, N. Sugimoto Speakers bureau: Takeda Pharmaceutical and Bristol Myers Squibb., A. Nakajima Consultant for: Bristol-Meyers, Mitsubishi Tanabe Pharma, Nippon Kayaku Co. Ltd., Novartis Pharma, Pfizer, Siemens Healthcare Diagnostics K.K. and Takeda Pharmaceutical Company., Speakers bureau: Bristol-Meyers, Mitsubishi Tanabe Pharma, Nippon Kayaku Co. Ltd., Novartis Pharma, Pfizer, Siemens Healthcare Diagnostics K.K. and Takeda Pharmaceutical Company., K. Ikari Grant/research support from: Astellas, UCB, Bristol-Meyers, Pfizer, Eisai, Tanabe-Mitsubishi, Chugai, AbbVie, Janssen Pharmaceutical, Otsuka, Kaken, Asahi-Kasei, Hisamitsu and Takeda., Speakers bureau: Astellas, UCB, Bristol-Meyers, Pfizer, Eisai, Tanabe-Mitsubishi, Chugai, AbbVie, Janssen Pharmaceutical, Otsuka, Kaken, Asahi-Kasei, Hisamitsu and Takeda., A. Taniguchi Grant/research support from: AbbVie, Eisai, Takeda, Tanabe-Mitsubishi, Teijin Pharma, Pfizer., Speakers bureau: AbbVie, Eisai, Takeda, Tanabe-Mitsubishi, Teijin Pharma, Pfizer., H. Yamanaka Grant/research support from: 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., 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.
DOI: 10.1136/annrheumdis-2017-eular.2340

SAT0080 CLINICAL SIGNIFICANCE OF SOLUBLE CD163 IN REFRACTORY SYSTEMIC-ONSET IDIOPATHIC ARTHRITIS

Y. Cui[1], H. Zeng[2]. *[1]Department of Pediatric Allergy, Immunology and Rheumatolog; [2]Department of Pediatric Allergy, Immunology and Rheumatology, Guangzhou Women and Children's Medical Center, Guangzhou, China*

Objectives: The present study explored the correlation of soluble CD163 with refractory systemic-onset juvenile idiopathic arthritis (refractory So-JIA) as well as the clinical significanceof soluble CD163 in (refractory So-JIA).
Methods: A total of 33 young patients diagnosed with So-JIA in the active period and 30 young patients diagnosed with So-JIA in the inactive period at Guangzhou Women and Children's Medical Center (Guangzhou, China) from January 2010 to January 2012 as well as 40 age-matched healthy individuals, who had visited the hospital for medical examination in the same time-period were enrolled in the present study. Flow cytometry was used to determine the lymphocyte count and ELISA was adopted for determining the levels of soluble CD163 in serum
Results: The levels of soluble CD163 and their correlation with indexes of disease activity were observed. In patients with So-JIA in the active period, the levels of soluble CD163 and the Tcell count were significantly higher than those in the inactive So-JIA and healthy individuals ($P<0.05$). Furthermore, the levels of soluble CD163 were positively correlated with C-reactive protein, ferritin, erythrocyte sedimentation rate, white blood cell count and immunoglobulin E as indexes of disease activity ($P<0.05$).
Conclusions: Soluble CD163 is a more valuable index for early recognise refractory active So-JIA, which can provide a basis for active period development and clinical observation.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.1993

SAT0081 RELATIONSHIP BETWEEN RHEUMATOID FACTOR POSITIVITY AND TREATMENT EFFECT WITH A FIRST BIOLOGIC AGENT IN RHEUMATOID ARTHRITIS: MULTICENTER STUDY USING A MIXED-EFFECT MODEL

Y. Ogawa[1], N. Takahashi[2], N. Ishiguro[2], T. Kojima[2]. *[1]Sakashita Hospital, Nakatsugawa; [2]Nagoya University Graduate School of Medicine, Nagoya, Japan*

Background: Although the presence of rheumatoid factor (RF) may be a risk factor for the onset and progression of rheumatoid arthritis (RA), sufficient literature does not exist to support the clinical relationship between RF positivity and the effects of treatment with biologic disease-modifying antirheumatic drugs (bDMARDS). This multicenter study aimed to explore the association of RF positivity with the effects of bDMARDS treatment in bio-naïve RA patients using a linear mixed-effect model.
Objectives: In a multicenter study, patients are clustered within institutions, therefore results of adjustment models are likely to be biased by random, unobserved between-institution differences. Such bias could lead to inaccurate prediction and interpretation of outcomes. We used a linear mixed-effect model including between-institution variation as a random effect, which would improve the performance of this multicenter study.
Methods: In total, 625 bio-naïve RA patients registered in the Tsurumai Biologics Communication Registry (TBCR), which comprises Nagoya University and 15 affiliated institutions in Japan, who received bDMARDS treatment during the study period (2006–2016) were eligible for inclusion. Demographic information and disease characteristics were assessed at baseline. DAS28 using erythrocyte sedimentation rate was recorded at baseline and following 24 weeks of therapy. In order to predict DAS28 improvement at 24 week, a linear mixed-effect model including between-institution variation as a random effect, controlling for RF positivity, age, sex, stage, methotrexate (MTX) use, prednisolone (PSL) use, tumor necrosis factor inhibitor (TNFi) or non-TNFi, and DAS28 at baseline, was developed.
Results: Of the 625 patients, 513 showed RF positivity and 112 were antibody negative. Mean ± SD age at baseline was 56.9±14.0 years; 509 patients were women (81.4%). The mean ± SD DAS28 score at baseline was 5.19±1.24. Proportion of MTX and PSL use were 79.3% and 58.1%, respectively. Following adjustment for relevant covariates, RF positivity was associated with a decrease biologic treatment effect ($\beta = -0.33\pm0.12$, $p<0.05$). In another model including an additional interaction term of RF status and TNFi or non-TNFi, the influence of RF status on treatment effect was persistent ($\beta = -0.26\pm0.14$, $p<0.1$). These two models had comparable AIC. A model excluding RF positivity term had larger AIC than these two models, suggesting that RF positivity is crucial for predicting the effect of bDMARDS treatment.

Fixed effects

	β coefficient estimate	Std. Error	p value
(Intercept)	0.18	0.42	0.67
RF positivity	-0.33	0.12	<0.05
DAS28 at baseline	0.74	0.041	<0.05
Age	-0.016	0.0037	<0.05
Female gender	-0.35	0.12	<0.05
Non-TNFi use (TNFi as reference)	0.29	0.12	<0.05
Methotrexate use	0.084	0.12	0.51
Prednisolone use	-0.23	0.10	<0.05
Stage	-0.24	0.10	<0.05

Conclusions: In our multicenter study using a linear mixed-effect model including between-institution variation as a random effect, RF positivity, in addition to some well-known variables, was found to be independently associated with decreased effects of bDMARDS treatment in bio-naïve RA patients.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.1508

SAT0082 THE INVESTIGATION FOR THE INFLUENCE OF SILASTIC ARTHROPLASTY OF METACARPOPHALANGEAL JOINT ON THE ACTIVE EXTENSION RANGE OF PROXIMAL INTERPHALANGEAL JOINT IN THE RHEUMATOID HAND

Y. Sakuma, M. Nakayama, H. Tobimatsu, H. Imamura, K. Yano, K. Ikari. *Orthopedic Surgery, Institute of Rheumatology, Tokyo Women's Medical University, Tokyo, Japan*

Background: The ulnar deviation (Ud) deformity of the metacarpophalangeal (MCP) joints is a typical deformity in the patients of rheumatoid arthritis (RA). Joint replacement arthroplasty can be indicated for the treatment of severe Ud deformity, silastic prosthesis being widely used with generally good results [1]. There are few, however, previous reports focusing on the relationship between the range of motion (ROM) of the MCP and PIP joints after the surgery.
Objectives: The objective of this study was to investigate the influence of silastic replacement arthroplasty of MCP joint replacement on post-operative extension range of PIP joint of the same finger.
Methods: RA patients who underwent silastic replacement arthroplasty of at least 1 MCP joint except for thumb for the treatment of Ud deformity were reviewed. There were 80 hands of 65 patients, average age of whom was 70.1 (32.4 - 86.1) years old, 56 patients being female and 9 being men. The ROM of the PIP joints before and after surgery was collected from the medical records, and the relationship between the post-operative change of ROM in PIP joints and post-operative ROM of in the MCP joint of same finger was examined. Paired-t test and the correlation coefficient were used for statistical analysis.
Results: The mean active extension range of PIP joints in index to little finger changed from -0.68° (-56.0–30.0) to 0.92° (-52.0–30.0)° [P=0.55], -5.64° (-104.0–30.0) to -8.44° (-56.0–30.0) [P=0.03], -3.44° (-112.0–32.0) to -8.91° (-94.0–40.0) [P=0.08], and -9.81° (-96.0–30.0) to -17.2° (-76.0–30.0) [P=0.07], respectively. There was an indication of a decrease in post-operative extension range of PIP joint except for the index finger. The ROM of the PIP joint was reduced only in the little finger, but was significantly increased in the index and middle finger. Correlation coefficients between the active flexion range of the MCP joint and the active extension range of the PIP joint of index to little finger was 0.34, 0.19, 0.08, and 0.33 respectively, no correlation being found.
Conclusions: Post-operative decline in active extension of the PIP joint might be a compensatory change accompanying a shift of the arc of motion of the

replaced MCP joint to a more extended position [2]. However, since the correlation between extension deficit of PIP join and MCP joint flexion range was not actually observed, it is unlikely that a decrease in the extension of the PIP joint is a result of compensation. There is a possibility that the procedure such as intrinsic tendon release, bone shortening by resection of metacarpal head, and centralization of extensor tendon [3], might influence the postoperative PIP joint motion. It is necessary to pay attention to changes in the ROM of the PIP joint after joint replacement arthroplasty of MCP joint.

References:
[1] Escott BG, Ronald K, Judd MG, Bogoch ER. NeuFlex and Swanson metacarpophalangeal implants for rheumatoid arthritis: prospective randomized, controlled clinical trial. J Hand Surg Am. 2010 Jan;35(1):44–51.
[2] Mannerfelt L, Andersson K. Silastic arthroplasty of the metacarpo- phalangeal joints in rheumatoid arthritis. J Bone Joint Surg 1975; 57A:484 – 489.
[3] Swanson AB. Flexible implant arthroplasty for arthritic finger joints: rationale, technique, and results of treatment. J Bone Joint Surg Am. 1972 Apr;54(3):435–55.

Acknowledgements:.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.4536

SAT0083 TOCILIZUMAB INDUCED CLINICAL REMISSION IN RHEUMATOID ARTHRITIS HAD MORE RESIDUAL DOPPLER SIGNALS IN COMPARISON WITH OTHER BIOLOGICS

Y. Hara[1], Y. Ishida[1], Y. Yamaguchi[1], Y. Yoshimine[1], T. Wibowo[1], Y. Manabe[1], M. Yaga[2], K. Kawamoto[1], H. Nakahara[1], S. Higa[1], T. Igarashi[1], K. Maeda[1], A. Ogata[1]. *[1]Division of Allergy, Rheumatology and Connective Tissue Diseases, Department of Internal Medicine; [2]Respiratory Medicine, Department of Internal Medicine, Ntt West Osaka Hospital, Osaka, Japan*

Objectives: To study the residual Power Doppler (PD) signals for assessing synovitis in CRP negative patients with rheumatoid arthritis (RA) treated with biologics.
Methods: Biologics treated RA patients who were maintained normal CRP for more than 6months (34 TNF inhibitors, 37 Tocilizumab, 23 Abatacept) were assessed by ultrasonography. Residual PD signals were assessed in MCP, PIP, and wrist joints with both hands. We assumed patients who had any PD signals in assessed joints were “residual PD signals”.
Results: All treated patients with biologics maintained normal CRP for a half year (n=94). 35.1% of patients treated with biologics had positive PD signals. The remission rates of DAS28-ESR, CDAI, and Boolean were 68.7%, 62.8%, and 48.9% respectively. 28.1% of patients who achieved DAS28-ESR remission had residual PD signals, 22.0% in CDAI, and 21.7% in Boolean. 23.8% of patients treated by TNF inhibitors who achieved DAS28-ESR remission had residual PD signals, 34.6% in Tocilizumab, and 20.0% in Abatacept. In case of setting the DAS28-ESR remission less than 3.0, 30.2% of patients who achieved DAS28-ESR remission had residual PD signals, 29.0% in less than 2.0, and 12.5% in less than 1.5. The patients who have no tender or swollen joints and the excellent patient oriented global health assessment (VAS score was zero) had fewer residual PD signals (23.4% vs 58.6% in tender joints, 26.7% vs 66.7% in swollen joints, and 13.3% vs 44.4% in patient VAS).

Table 1. Rate of remission and residual PD signals

	All biologics	TNF inhibitors*	Tocilizumab	Abatacept
Patients number	94	34	37	23
Residual PD signals**	33/94 (35.1%)	9/34 (26.4%)	15/37 (40.5%)	9/23 (39.1%)
DAS28-CRP remission				
Achieved***	78/94 (83.0%)	32/34 (94.1%)	31/37 (83.8%)	15/23 (65.2%)
Residual PD signals	22/78 (28.2%)	8/32 (25.0%)	10/31 (32.3%)	4/15 (26.7%)
DAS28-ESR remission				
Achieved	57/94 (68.7%)	21/34 (72.4%)	26/37 (78.8%)	10/23 (47.6%)
Residual PD signals	16/57 (28.1%)	5/21 (23.8%)	9/26 (34.6%)	2/10 (20.0%)
CDAI remission				
Achieved	59/94 (62.8%)	26/34 (76.5%)	23/37 (62.2%)	10/23 (43.5%)
Residual PD signals	13/59 (22.0%)	5/26 (19.2%)	7/23 (30.4%)	1/10 (10.0%)
Boolean remission				
Achieved	46/94 (48.9%)	21/34 (61.8%)	17/37 (45.9%)	8/23 (34.8%)
Residual PD signals	10/46 (21.7%)	5/21 (23.8%)	4/17 (23.5%)	1/8 (12.5%)

*TNF inhibitors (Infliximab (n=6), Etanercept (n=14), Adalimumab (n=7), Golimumab (n=4), Certolizumab pegol (n=3)). ** Residual PD signals: patients who had any PD signals in asessed joints. ***Achieved: remission rate in biologics treated patients who were maintained normal CRP for a half year.

Conclusions: The patients who achieved clinical remission had residual PD signals. Patients with Tocilizumab induced remission had more residual PD signals compared with TNF inhibitor or Abatacept induced remission. More strict criteria of clinical remission may reduce residual PD signals in patients treated by Tocilizumab.

Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.2417

SAT0084 CHARACTERISTICS OF PATIENTS WHO RESPOND POORLY TO REDUCTION OF BIOLOGICAL DISEASE-MODIFYING ANTI-RHEUMATIC DRUGS IN RHEUMATOID ARTHRITIS; RT-4 STUDY POST HOC ANALYSIS

Y. Urata[1], S. Abe[2], B. Devers[2], Y. Nakamura[3], H. Takemoto[4], K.-I. Furukawa[5]. *[1]Department of Rheumatology, Tsugaru General Hospital, Gosyogawara; [2]Marketing Department, Diagnostics Division, Sekisui Medical Co., Ltd., Tokyo; [3]Department of Orthopedic Surgery; [4]Department of Dermatology, Tsugaru General Hospital, Gosyogawara; [5]Department of Pharmacology, Hirosaki University Graduate School of Medicine, Hirosaki, Japan*

Background: A number of studies have shown that reduction of biological disease-modifying anti-rheumatic drugs (bDMARDs) is possible for rheumatoid arthritis (RA) patients in whom bDMARD treatment has induced clinical remission or low disease activity. However, there have been few studies which have evaluated the background characteristics of patients who have difficulty in reducing bDMARDs despite being in clinical remission or having low disease activity.
Objectives: To clarify the characteristics of RA patients who have difficulty with bDMARD reduction despite maintaining clinical remission in the rT-4 study.
Methods: This study is a post-hoc analysis of the rT-4 study. Briefly introducing the rT-4 study: 209 RA patients demonstrating both SDAI remission and MMP-3 normalization using bDMARDs for $\geq$3months were randomly allocated to one of four strategy groups: Standard care (SC group; n=50); SDAI-driven therapy (n=53); MMP-3-driven therapy (n=55); or both SDAI and MMP-3-driven therapy group (Twin; T group; n=51). Dose reduction methodology (every 3 months): ettanercept (ETN) - period between injections increased by one week; tocilizumab (TCZ) - dose reduced by 80mg or period between injections increased by one week; up to a minimum dose of: ETN - 25 mg every 5 weeks; TCZ - 80 mg every 5 weeks or 162 mg every 5 weeks. The dose was reverted to the previous level in the event that the target scores were exceeded, and the lower dose was eventually reattempted after the target was re-achieved. The primary outcome was the difference in the proportion of patients who maintained remission at 12 months among the four groups, compared against a non-inferiority margin of 10%. The results of the rT-4 study revealed that a twin target strategy can achieve effects non-inferior to standard care with regard to maintaining clinical remission. Specifically, subgroup analysis was carried out between the T and SC groups of the rT-4 study. A factor was defined as significant when the difference in the proportion of patients who maintained remission at 12 months in the two groups across subgroups, exceeded 10%.
Results: The requisite margin was recognized only for rheumatoid factor (RF) negativity (35.2%; 95% CIs of 14.4 to 65.0). Others factor were not identified.
Disease activity is likely to be affected by even a small dose reduction of bDMRADS in RA patients who are RF negative, regardless of the presence or absence of anti-citrulline antibody, and it can probably be explained as a nocebo effect. Nocebo effects occur in studies which investigate the effectiveness of drug reduction, and we believe that the nocebo effect is prone to happen in RF-negative patients.
Conclusions: The twin target strategy can be used to reduce the dose of bDMARDs for RA patients while maintaining the effectiveness of said bDMARDs, with the exception of RF negative patients.

Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.2498

SAT0085 A STUDY ON CHARACTERISTICS OF RHEUMATOID ARTHRITIS PATIENTS ACHIEVING DEPRESSION REMISSION WITH 6 MONTHS OF BIOLOGIC AGENT TREATMENT

Y. Miwa[1], N. Yajima[1], T. Isozaki[1], R. Takahashi[1], Y. Miura[1], Y. Ikari[1], M. Hatano[1], T. Hayashi[1], T. Kasama[1], K. Sanada[2] on behalf of ASHURA Registry Group. *[1]Division of Rheumatology, Department of Medicine; [2]Department of Psychiatry, Showa University School of Medicine, Tokyo, Japan*

Background: Approximately 15% of RA patients also suffer from depression, with an odds ratio of 1.42 (95% CI 1.3 - 1.5) compared with healthy people. A previous study reported that biological agents can improve the depressed state associated with RA. Although previous studies have been cross-sectional, there were no reports that analyzed factors that led to depression remission.
Objectives: To examine the relationship between baseline factors and depression remission after six-month biologic agent treatment in rheumatoid arthritis (RA) patients.
Methods: The subjects were 384 RA patients treated with biologic agents. The following patient’s characteristics were investigated: age, gender, number of previous drugs, disease duration, type of biologic agents, baseline steroid dosage, methotrexate dosage and serum matrix metalloproteinase-3 (MMP-3) levels. For evaluation, we used the Simplified Disease Activity Index for RA disease activity; the Health Assessment Questionnaire Disability Index (HAQ-DI) score for activities of daily living; the Short Form-36 for nonspecific health-related quality of life; and Hamilton Depression Rating Scale (HAM-D) scores for depression status. Depression remission was defined by HAM-D$\leq$7 after 6 months of treatment. The subjects were divided into two groups according to the presence or absence of depression, and a retrospective study was performed.
Results: We included 152 patients in the analysis. Two hundred thirty-two