measures, the power Doppler joint count (UPDJC), which demonstrates hyper vascularization of the synovium, and the 12-multiparameter disease activity test (MBDA), which incorporates 12 biomarkers in an algorithm leading to a single disease activity score. The UPDJC includes scoring at six dorsal wrist and six dorsal MCP sites [2]. The average duration of RA in patients at this clinic is > 10 years.

Results: Fifty two patients were found to be in inadequate control at the clinic and were started on Tofacitinib. Ten patients discontinued treatment with Tofacitinib within the first year, four because of an inadequate response, and four because of adverse effects (two deaths, one with lung cancer and one with colon cancer), and two because of noncompliance or loss to follow up.

Forty two patients remained on treatment with Tofacitinib for at least one year, and at this point in time, 21 patients have remained on the drug for two or more years. The DAM assessments and selected changes in certain laboratory parameters for two yearly time points are shown for these patients in Table 1.

Clinical significance was determined by Paired-samples T tests.

Conclusion: Patients showed sustained significant clinical responses for two or more years by all three diverse DAMs and several other common measures of clinical response. The initiation of Tofacitinib in a Rheumatology clinic utilizing a T2T strategy clearly showed sustained clinical responses for up to two years for a significant number of patients. Significant changes in some of the cytokine components of the MBDA were also noted, including increases in leptin levels.

The use of the T2T strategy offers a unique opportunity to obtain real time data on patients treated with specific therapeutic agents at a community rheumatology clinic.

Abstract THU0105 –Table 1.

	Baseline	Year One	Year One	Year Two	Year Two
	Data	N	Data	Data	Prob*
USPDJC ¹	8.7 +/- 3.8	35	6.2 +/- 2.2	20	6.6 +/- 2.2 **
DAS28CRP	4.97 +/- 1.01	26	3.55 +/- 1.00	15	3.12 +/- 1.28 ***
DAS28ESR	5.37 +/- 0.83	21	3.91 +/- 1.28	15	3.94 +/- 1.15 ***
CDAI	30.1 +/- 11.5	25	14.7 +/- 7.8	15	14.3 +/- 10.3 ***
MBDA ²	48.5 +/- 12.2	39	42.4 +/- 10.4	24	38.2 +/- 11.5 **
Dr Global	4.8 +/- 1.3	35	2.9 +/- 1.0	19	3.0 +/- 1.3 ***
Pt Global	5.3 +/- 2.7	33	3.8 +/- 2.7	18	3.1 +/- 2.4 *
TCI ³	13.1 +/- 6.6	36	7.2 +/- 6.6	20	6.3 +/- 6.8 ***
SIC ⁴	7.9 +/- 3.8	36	3.4 +/- 4.5	19	3.2 +/- 2.1 ***
CRP	8.4 +/- 8.5	24	4.3 +/- 2.8	12	3.5 +/- 3.5 NS
ESR	24.4 +/- 15	32	22.9 +/- 16	19	20.6 +/- 15 NS
VCAM1	0.70 +/- 0.22	25	0.60 +/- 0.14	15	0.57 +/- 0.11 *
TNFR ¹	1.7 +/- 0.5	24	1.4 +/- 0.4	15	1.4 +/- 0.5 *
YKL ₄₀	114 +/- 72	26	85 +/- 55	14	75 +/- 38 *
Leptin	36.5 +/- 35	23	40 +/- 32	17	39 +/- 26 ***
prob<0.05*			prob<0.01**		prob<0.001***
Ultrasonography Joint Count ¹			Multi-Biomarker Disease Activity Score ²		
Tender Joint Count ¹			Swellen Joint Count ¹		

REFERENCES:

- [1] Smolen, J. et al. Treating Rheumatoid Arthritis to Target: Recommendations of an International Task Force. *Ann. Rheum. Dis* 2010;69:631-6372.
- [2] Shin-ya Kawashiri et. All. The power Doppler Ultrasonography Score from 24 Synovial Sites or 6 Synovial Sites, including the MCP joints, reflects the Clinical Disease Activity and Level of Serum Biomarkers in Patients with RA. *Rheumatology* (2011) 50 (5): 962-965.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.2012

THU0106

SYSTEMIC IMMUNE-INFLAMMATION INDEX IN RHEUMATOID ARTHRITIS PATIENTS: RELATION TO DISEASE ACTIVITY

Takahiro Yoshikawa, Tetsuya Furukawa, Masao Tamura, Teppei Hashimoto, Mai Morimoto, Naoto Azuma, Masayasu Kitano, Kiyoshi Matsui. *Hyogo college of Medicine, Division of Rheumatology, Department of Internal Medicine, Nishinomiya-city, Japan*

Background: Among the immune system elements, neutrophils, lymphocytes and platelets play a role in the regulation of inflammation while also undergoing changes secondary to inflammation. Recently, the neutrophil to lymphocyte ratio (NLR) and platelet to lymphocyte ratio (PLR) have been used as markers of systemic inflammation including rheumatoid arthritis (RA). It was reported that systemic immune-inflammation

index (SII) is positively correlated with neutrophil and platelet counts and inversely correlated with lymphocyte count.

Objectives: We investigated whether SII in RA patients and compare between active cases and those in remission.

Methods: This research is a cross-sectional study. In 734 RA patients registered in the database of our department from January to April in 2016, a total of 574 eligible RA patients were included in this study, excluding 160 patients whose neither RA disease activity or laboratory data were available. Correlations of SII with the disease activity of RA were evaluated. SII was calculated by the following calculation formula; SII = Neutrophils (%) / Lymphocyte (%) * Platelets (G/L).

Results: The median age of patients was 65.0 (IQR: 53.0-73.0) years and the median of disease duration was 9.0 (6.0-14.0) years. The DAS28-ESR was median 2.65 (1.90 - 3.37). SII was 612.0 (400.6 - 951.8). There was a significant correlation between SII and DAS28-ESR ($r=0.322$, $P<0.0001$), and SII was significantly elevated as disease activity increased (median 513.6 in remission group, 605.7 in low disease activity group, 793.8 in moderate disease activity group and 1367.1 in high disease activity group, respectively; $P<0.00001$). In contrast to SII, in NLR no significant difference was observed in all groups. The cut-off of SII was 635.9, 688.6 and 912.5 for DAS28-ESR remission, low disease activity and high disease activity. In multiple regression analysis of LogSII, compared to conventional DMARDs treatment, anti-cytokine therapy such as anti-IL-6 receptor inhibitor or anti-TNF inhibitor showed a significant negative correlation, but no significant differences were observed with abatacept or JAK inhibitor.

Conclusion: In this study, for the first we demonstrated that SII was more strongly related to disease activity than NLR. SII is an emerging inflammatory biomarker which could be used to evaluate disease activity in RA patients. A larger scale longitudinal study is recommended to confirm the present results and further demonstrate the relation to medications received and disease outcome.

Disclosure of Interests: Takahiro Yoshikawa: None declared, Tetsuya Furukawa: None declared, Masao Tamura: None declared, Teppei Hashimoto: None declared, Mai Morimoto: None declared, Naoto Azuma: None declared, Masayasu Kitano: None declared, Kiyoshi Matsui Grant/research support from: Asahi Kasei, Astellas

DOI: 10.1136/annrheumdis-2019-eular.4481

THU0107

BARIATRIC SURGERY DOES NOT PREVENT THE DEVELOPMENT OF RHEUMATOID ARTHRITIS IN OBESE SUBJECTS

Yuan Zhang¹, Anna Rudin¹, Cristina Maglio¹, Lena Carlsson². ¹University of Gothenburg, Department of Rheumatology and Inflammation Research, Gothenburg, Sweden; ²University of Gothenburg, Department of Molecular and Clinical Medicine, Gothenburg, Sweden

Background: Obesity is among the risk factors for rheumatoid arthritis (RA)^{1,2}. In subjects with RA, bariatric surgery-induced weight loss has been associated with a lower disease activity, a decrease in inflammatory markers and a lower use of disease-modifying antirheumatic drugs³. However, the effect of bariatric surgery on the prevention of RA is not known. We have previously shown that bariatric surgery reduces the risk of gouty arthritis and psoriasis in obese subjects^{4,5}.

Objectives: By exploiting a longitudinal study enrolling more than 4000 obese subjects, we aim to determine if bariatric surgery prevents the incidence of RA.

Methods: The Swedish Obese Subjects (SOS) study is a longitudinal controlled trial on the effect of bariatric surgery on the incidence of obesity-related diseases. It includes 4047 obese subjects: 2010 underwent bariatric surgery and 2037 constituted the matched control group⁶. Seven Swedish local ethics review boards approved the study protocol. SOS study participants who developed RA were identified by searching the Swedish National Patient Register. Eleven subjects with prevalent RA at baseline are excluded by the analyses. Patients were followed up until diagnosis of RA, death, migration or end of follow-up (December 2016).

Results: During a follow-up for up to 29 years, 92 subjects developed RA. Fifty-one individuals (55%) had a seropositive RA (serostatus was unknown for 17 subjects). Forty-seven subjects (2.3%) developed RA in the surgery group compared to 45 subjects (2.2%) in the control group. Bariatric surgery was not associated with the incidence of RA during follow up (log-rank $P=0.88$; unadjusted Hazard Ratio-HR 1.03, 95% Confidence Interval-CI 0.69-1.55, $P=0.88$, Figure 1). Similar results were