Tofacitinib (TOF) counted 2 while real chosen cases were TNF-i counted 65, TCZ counted 11, ABT counted 21, and TOF counted 11. Overall success ratio was 57.4%. In these cases, true choice had been done in 97 cases of 108. In failure cases, simulated TNF-i counted 44, TCZ counted 16, ABT counted 2, and TOF counted 1, while real chosen cases were TNF-i counted 49, TCZ counted 17, ABT counted 10, and TOF counted 4. True success counted 97, and false success counted 11, while false success counted 37 and true failure counted 54. Then, sensitivity was 89.8% and specificity was 67.5% (<0.01).

Conclusions: Drug choice of BIO supported with simulation was superior to real choice. If risk management was adequately performed, SR@3Y is expected more than 85%.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.6499

AB0225 CHARACTERISTICS OF MHAQ FOR UPPER AND LOWER EXTREMITY FUNCTION, AND RELATIONSHIP WITH AGE AND DISEASE ACTIVITY IN RHEUMATOID ARTHRITIS PATIENT

I. Yoshii [1], T. Chijiwa [2]. [1] *Rheumatology, Yoshii Hospital, Shimanto City;* [2] *Rheumatology, Kochi Memorial Hospital, Kochi, Japan*

Background: Activity in daily living (ADL) is one of main target to maintain patient's quality of life in rheumatoid arthritis (RA) treatment. Modified Health Assessment Questionnaire (mHAQ) is a most popular index for ADL in routine practice. mHAQ is separated according to function of extremity; namely the first four categories are reflections of upper extremities (mHAQ-UE), while the latter are of lower extremities (mHAQ-LE). If function of each extremity is separately disabled, it should be reflected on each part of mHAQ.

Objectives: mHAQ was separately investigated in order to evaluate characteristics of each part of mHAQ.

Methods: 964 RA patients since January 2010 had been treated. In these, patients who have been treated consecutively for more than five years at December 2016 were recruited in this study. Patient who had been operated musculoskeletal surgery was eliminated. mHAQ, mHAQ-UE and mHAQ-LE, and 28-joint disease activity index with C-reactive protein (DAS28-CRP) were measured every time since first consult. Average value of these parameters including Sharp/van der Heijde Score (SvdHS) were calculated annually. Relationship between each of mHAQ and parameters for each year were evaluated used with multiple linear regression analysis.

Predominant extremity in mHAQ was evaluated as in what upper extremity predominant (G-UE), lower extremity predominant (G-LE), same weight (G-EV), and both of them were zero (G-Z). Changes of the evaluation from first to the last period were evaluated year by year.

Results: One hundred and two male and three hundred and thirty-three female, totally four hundred and thirty five patients were picked up. Their average value of age, SvdHS, DAS28-CRP, mHAQ, mHAQ-UE, and mHAQ-LE were 64.65, 52.1, 2.96, 0.439, 0.386 and 0.491 at first consult, and 71.05, 52.1, 1.72, 0.425, 0.344, and 0.505 at last time follow up, respectively. Both of mHAQ-UE and mHAQ-LE have demonstrated significant regression with both age and SvdHS throughout treatment, while not significant with DAS28-CRP, however, mHAQ-UE correlated with tenderness joint except of knee, and mHAQ-LE have correlated with swelling of the knee joint significantly.

G-UE had counted for 85 patients, G-LE for 136, G-EV for 49, and G-Z for 165 at first consult. Once evaluation had changed, then have continued to the last in all patients. G-UE resulted in G-UE for 83, while G-LE for 2 at last. G-LE resulted in G-LE for 133, G-Z for 2, and G-EV for 1. G-EV resulted in G-LE for24, G-UE for 7, and G-EV for 18. G-Z resulted in G-Z for 137, G-LE for 19, G-UE for 4, and G-EV for 5. G-EV to G-EV demonstrated significant higher DAS28-CRP improvement from first to the last than to G-LE, and to G-UE, and G-EV to G-LE demonstrated significant higher DAS28-CRP improvement than to G-UE, although no significant difference demonstrated for mHAQ improvement among groups. G-UE to G-LE demonstrated significant higher DAS28-CRP improvement than to G-UE, as well as G-UE to G-LE demonstrated significant higher mHAQ improvement than to G-UE.

Conclusions: From these results, it is suggested that mHAQ-UE and mHAQ-LE move under common influence. However, mHAQ-UE change may be reflected by upper exrtremities joint tenderness, while mHAQ-LE can move more sensitively with knee swelling. Tight disease activity control may reduce mHAQ both of them, however, reduces more predominantly with mHAQ-UE than mHAQ-LE.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.2012

AB0226 FUNCTIONAL DISABILITY IN RA PATIENTS TREATED WITH BIOLOGICS: HUR-BIO REAL LIFE RESULTS

A. Sari, B. Armagan, A. Erden, L. Kilic, O. Karadag, A. Akdogan, S. Apras Bilgen, S. Kiraz, U. Kalyoncu, I. Ertenli. *Rheumatology, Hacettepe University School of Medicine, Ankara, Turkey*

Background: Rheumatoid arthritis (RA) is a chronic, erozive disorder which may lead to permanent joints damage. Health assessment questionnaire (HAQ) is frequently used for evaluating functional disability in RA patients.

Objectives: The aim of this study is to determine the effect of biologic treatment on functional disability in RA patients.

Methods: HUR-BIO (Hacettepe University Rheumatology Biologic Registry) is a prospective, monocentric database of biological treatments including 1229 RA patients by August 2016. 523 patients in whom HAQ assessment before biologics was avaliable, were recruited in this retrospective analysis. HAQ score $\geq$1.0 was defined as severe functional disability.[1] HAQ assesment at last follow-up visit were evaluated. Demographic,clinical and serologic data of patients were also collected. Improvement of HAQ score 0,22 points or more was considered as clinically significant response to treatment.[1]

Results: Among 523 patients (80.5% female), mean age was 52.6±12.5 and mean disease duration was 9.4±7.3 years. Seropositivity for RF and/or CCP was present in 67.2% of patients. At baseline visit, HAQ score was $\geq$1.0 in 268 patients (51.2%). Baseline and last follow-up HAQ scores were 1.07±0.62 and 0.64±0.57. Minimal clinically significant improvement of HAQ score was observed in 238/377 patients (63.1%). Clinically significant response was more frequent in patients with baseline HAQ score of $\geq$1 (153/195 (78.4%) vs 85/182 (46.7%), $p<0.001$). Table 1 represents features of patients according to baseline HAQ score. Mean follow-up time was 16.4±16.4 months. Data of at least one visit was available for 377 (72.0%) patients.

Table 1. Comparison of demographic an clinical data of patients according to baseline HAQ score

	HAQ $\geq$1 (n=268)	HAQ<1 (n=255)	p
Age, mean ± SD	55.1±12.3	50.0±12.3	<0.001
Disease duration (years), mean ± SD	10.2±8.0	8.6±6.3	0.01
BMI, mean ± SD	31.3±6.4	28.9±5.9	<0.001
High school or collage graduate n (%)	68 (25.3)	110 (43.1)	<0.001
Smoking (current or previous),n (%)	95 (35.4)	123 (4.,4)	<0.001
Hypertension, n (%)	101 (37.7)	59 (23.1)	<0.001
Patient global assesment VAS, mean±SD	6.8±1.4	5.7±1.8	<0.001
Fatigue VAS, mean ± SD	6.7±2.0	5.0±2.8	<0.001
Pain VAS, mean ± SD	7.1±1.6	6.1±2.1	<0.001
Biologic switch, n (%)	63 (23.5)	41 (16.1)	0.033

Conclusions: Functional disabilty was observed approximately half of patients. Clinically significant improvement was more frequent among patients with higher baseline HAQ scores particularly. Biologic treatment seems to be provide significant functional improvement. However significant functional disability persists in one fourth of patients.

References:

[1] Lillegraven S., Kvien T.K. Measuring disability and quality of life in established rheumatoid arthritis. Best Pract Res Clin Rheumatol. 2007;21:827–840.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.4098

AB0227 IMPACT OF EARLY ARTHRITIS CLINIC ON THE RATE OF TREATMENT WITH BIOLOGICS IN RHEUMATOID ARTHRITIS: INTERRUPTED TIME SERIES ANALYSIS

I. Farina, E. Galuppi, G. Ciancio, C. De Giorgio, C.A. Scire', M. Govoni. *Department of Medical Sciences, UOL Rheumatology, Section of Haematology and Rheumatology, University of Ferrara and Azienda Ospedaliero-Universitaria Sant'Anna, Ferrara, Italy*

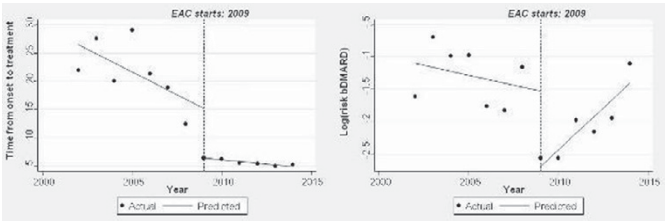
Background: Early diagnosis is one of the mainstay of rheumatoid arthritis (RA) management. Early diagnosis reflects on early treatment, better response with reduction of long-term detrimental disease outcomes. Early arthritis clinics (EAC) are the healthcare services devoted to facilitate early diagnosis and optimize treatment of early onset inflammatory arthritis. Despite the a priori beneficial potential of EAC, no strong experimental data support EAC efficacy. Interrupted time series analysis is one of the "next best" approaches for dealing with interventions when randomisation is not possible or clinical trial data are not available.

Objectives: To evaluate the impact of the implementation of an EAC in terms of probability of starting second-line biologic DMARDs, using a quasi-experimental approach.

Methods: RA patients fulfilling 1987 ACR criteria who attended the outpatient rheumatology clinic (RC) between 2002 and 2008 and the Early Arthritis Clinic between 2009 and 2014 were retrospectively analyzed. The EAC was developed as a healthcare service integrating primary care with tertiary rheumatology care to provide early referral of suspected inflammatory arthritis and tight monitoring and standardized therapeutic approach according to "treat to target" (T2T) strategy and EULAR guidelines to early RA. The two sub-cohorts were compared in terms of: 1) lag time from symptoms onset to RA treatment with DMARDs; and 2) risk of treatment with bDMARDs at 24 months. Interrupted time analysis was performed to compare lag time from onset to treatment and log-transformed 24-month risk of biologics periods before the implementation of the EAC with subsequent periods.

Results: A total of 353 RA patients were included: 208 (mean±SD age 58.7±12.6 years, 164 F, baseline DAS28 4.76±1–23) followed in RC and 145 (mean±SD age 58.8±14.9 years, 106 F, DAS28 5.09±1.31) in EAC. Lag time from symptoms onset to treatment resulted significantly lower (median [IQR] months 4 [2–7] vs 12 [5–24]; $p<0.0001$) in patients managed in EAC compared with RC. Within 24 months a biologic therapy was started in 62/208 (29.8%) of patients followed in RC, and 21/145 (14.5%) in EAC group (p=0.001), along with an increased remission rate at 24 months (43% vs 62%, $p<0.001$). Analyzing the time series "interrupted" by the implementation of the EAC, comparing before and after

intervention periods, a significant change in slope was observed for both lag time (coefficient -8.85 [95% CI -17.25, -0.44], p=0.04) and risk of treatment with biologics (coefficient -1.17 [95% CI -2.09, -0.24], p=0.01). As expected in more recent years - according to a T2T approach - a monotonous positive trend in percentage of patients treated with biologics is also observed in EAC (coefficient 0.31 [95% CI 0.05, 0.58]).



Conclusions: The implementation of an EAC that integrates care and applies tight control and standard of care, leads to early diagnosis and treatment and may lower the need – overtime - of second-line biologic drugs, with a significant impact both on individuals and health care systems.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.6481

AB0228 IMMUNOLOGICAL APPROACH TO THE DIAGNOSIS OF LESIONS OF THE NERVOUS SYSTEM IN PATIENTS WITH RHEUMATOID ARTHRITIS

I.P. Gontar[1], E.V. Baranov[1], L.A. Maslakova[1], A.S. Trofimenko[1], O.V. Paramonova[2]. *[1]Clinical Immunology Lab, FSBSU Research Institute for Clinical and Experimental Rheumatology; [2] Department of Hospital Therapy, Volgograd State Medical University, Volgograd, Russian Federation*

Background: Although S100 proteins represent 40% of the neutrophil cytoplasmic proteins, their physiological and pathological functions are still unclear. S100 protein concentrations are dramatically enhanced in synovial fluid and synovium of patients suffering from rheumatoid arthritis (RA). Their expression seems to correlate with disease activity and joint damage [1].
Objectives: Improvement of immunological detection of neurological involvement in RA by means of polyacrylamide magnetic beads with immobilized S- 100 protein.
Methods: The research was carried out in agreement with the principles of the World Medical Association Declaration of Helsinki. The informed consent had been signed by all involved persons, another obligate requirement was age 18 years or more. The patients were from the rheumatologic wards in Volgograd Municipal Hospital No. 25 and Volzhsky Municipal Hospital No. 1. Diagnosis of RA was established by ACR-EULAR criteria (2010), RA activity was evaluated using DAS28. Serum anti-S-100 protein antibodies were measured by ELISA, with S-100 protein immobilized on polyacrylamide magnetic beads as an antigen. The antibody concentrations were expressed as optical density units (ODU) and were considered positive if the cutoff value ($M+2\sigma$ of the reference group, 0.050 ODU) was exceeded. The results were expressed as mean$\pm\sigma$, differences were considered significant when $p<0.05$. Pearson correlation coefficient (r) was also used.
Results: 40 healthy persons (29 mans and 11 women), and 95 female patients with RA and the neurological signs, appeared during active phase of the disease, were recruited for this study. Mean age of the healthy controls was 36±7 years, and for the RA group it was equal to 55±11 years. Mean RA duration was 4.2±2.9 years. 13 patients had low, 52 – moderate, and 8 – high disease activity. The most common types of neurological involvement were mononeuropathy (n=29), polyneuropathy (n=65), radiculopathy (n=80); cervicocranialgias (n=51), and trigeminal neuralgias (n=14). The symptoms of central nervous system damage (TIA, seizures, cerebellar ataxia, dysarthria) were found in 21 patients. In RA group, anti-S-100 protein antibodies were detected in 11 (32.4%) cases, with mean concentration 0.078±0.028 ODU. The patients with different neurological signs had mean anti-S-100 protein antibody concentration 0.138±0.046 ODU, the subgroup without any neurological signs had 0.060±0.024 ODU (p=0.022). In all cases analyzed index correlated with the degree of activity of the pathological process. High levels of antibodies to S-100 protein in RA associated with central nervous system (CNS) and peripheral nervous system (PNS).
Conclusions: We found an association between neurological involvement in RA and elevation of anti-S-100 protein antibody concentrations. These findings give us an opportunity to improve the diagnosis of minor neurological damage in RA and thus to make more precise adjustment of the treatment.
References:
[1] Baillet A. S100A8, S100A9 and S100A12 proteins in rheumatoid arthritis. Rev Med Interne. 2010 Jun;31(6):458–61.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.3123

AB0229 DOES EXPRESSION LEVEL OF VIP AND ITS RECEPTORS CORRELATED WITH DISEASE SEVERITY IN EARLY ARTHRITIS?

I.V. Seoane[1], A. Lamana[2], M. Carrión[1], Y. Juarranz[1], R. García-Vicuña[2], I. González-Álvaro[2], C. Martínez[3], R.P. Gomariz[1]. *[1]Dpto. Biología Celular, Facultad de Biología, Universidad Complutense de Madrid; [2]Rheumatology Service, Hospital Universitario de la Princesa, Instituto de Investigación Sanitaria Princesa; [3]Dpto. Biología Celular, Facultad de Medicina, Universidad Complutense de Madrid, Madrid, Spain*

Background: Rheumatoid Arthritis (RA) is a heterogeneous disease, not only in the course but also in the response to treatment (1). So, a major challenge is the classification of patients according to the disease severity/mildness to apply customized therapeutic strategies. Low vasoactive intestinal peptide (VIP) serum levels are associated to a worse clinical course in Early Arthritis (EA) (2) and the expression of its receptor VPAC1 is associated with disease activity (3).
Objectives: To identify in an Early Arthritis cohort associations between clinical parameters of severity and serum VIP levels or expression of their receptors VPAC1 and VPAC2.
Methods: We studied 212 patients from the PEARL (Princesa Early Arthritis Registry Longitudinal) study. Follow-up includes five visits (0, 6, 12, 24 and 60 months) in which we collect demographic, clinical, laboratory, therapeutic and radiological data, as well as biological samples. Since there is not a global disease severity variable for RA, we stratified severity as follows: A) remission after two years of follow-up defined as SDAI <3.3 (4). B) Global Disease Assessment by Physician >75th percentile of the population (severe disease) or >25th percentile (mild disease). C) Median value in our population of the Δ erosion score (SvdH method assessed in hands) after two years of follow-up. VIP levels were determined by enzyme immunoassay and mRNA expression levels of VIP receptors in PBMCs by real-time PCR. To analyze the association between severity/mildness and the expression of VIP/VPAC we use several parametric and non-parametric hypothesis testing (t-test, ANOVA and Kruskal-Wallis) using Stata 12 for Windows (StataCorp PL, College Station, TX, USA).
Results: We observed a trend towards higher baseline VIP serum levels in patients who reached remission in terms of SDAI (p=0.1169). Patients no achieving remission showed lower VPAC1 expression (p=0.0494). Severe patients defined by GDAPh displayed a clear trend to lower VIP levels (p=0.081). Those patients also exhibited significant lower VPAC1 expression levels (p=0.0276). Concerning bone erosion score, we did not observe a significant association with VIP levels; interestingly we found that those patients classified as “severe” by erosion score displayed lower VPAC1 expression levels (p=0.0722) and higher levels of VPAC2 (p=0.0253).
Conclusions: VIP serum levels and VPAC1 and 2 receptors expression are associated with a more severe phenotype in EA patients stratified by SDAI, GDAPh and bone erosion.
References:
[1] Firestein GS. Nature. 2003;423(6937):356–61.
[2] Martínez C, Ortiz AM, Juarranz Y, et al. PloS one. 2014;9(1):e85248.
[3] Seoane IV, Ortiz AM, Piris L, et al. PloS one. 2016;11(2):e0149141.
[4] Aletaha D, Smolen J. Clin Exp Rheumatol. 2005;23(5 Suppl 39):S100–8.
Acknowledgements: This work has been supported by Instituto de Salud Carlos III, Spain, cofinanced by FEDER, European Union: RETICS program, Red de Investigación en Inflamación y Enfermedades Reumáticas (RD16/0012/0008 (RPG) and RD16/0012/0011 (IGA) and the projects PI12/00758 (RPG), PI14/00477 (CMM) and PI14/00442 (IGA).
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.4817

AB0230 POLYMORPHISM OF CYTOTOXIC T-LYMPHOCYTE 4 +49A/G IS ASSOCIATED WITH EARLY PRESCRIBING THE BIOLOGICAL THERAPY IN ACTIVE EARLY RHEUMATOID ARTHRITIS PATIENTS (ERA PTS) REFRACTORY TO THE PREVIOUS SUBCUTANEOUS METHOTREXATE (SC MTX) MONOTHERAPY

I. Guseva[1], A.S. Avdeeva[1], E.L. Luchikhina[1], D.D. Abramov[2], N.V. Demidova[1], E.N. Alexandrova[1], A.A. Novikov[1], M.Y. Krylov[1], E.Y. Samarkina[1], D.Y. Trofimov[2], D.E. Karateev[1], E.L. Nasonov[1]. *[1]V.A.Nasonova Research Institute of Rheumatology; [2]NRC Institute of Immunology of FMBA of Russia, Moscow, Russian Federation, Moscow, Russian Federation*

Background: Monotherapy with MTX is the first step of RA therapy as recommended by EULAR. According to “Treat to Target” (T2T) strategy principles insufficient response to MTX requires prompt switch to a combination therapy with biological agents.
Objectives: To find out whether polymorphisms of immune response genes are associated with early prescribing the biological treatment in eRA pts, refractory to the SC MTX monotherapy.
Methods: By January 2014, 210 pts with RA were included in the REMARCA study (Russian InvEstigation of MethotrexAte and biologics in eaRly aCtive inflammatory Arthritis), and 88 pts have passed the 12 months control point. All pts started SC MTX monotherapy with rapid up-titration of the dose from 10 to 25–30 mg/week. Therapy was revised every 3 months using DAS28, SDAI and CDAI indices. Combination with biologics (in most cases TNF inhibitors)