REFERENCES:

- [1] Al Saleh J, Sayed ME, Monsef N, Darwish E. "The Prevalence and the Determinants of Musculoskeletal Diseases in Emiratis Attending Primary Health Care Clinics in Dubai." *Oman Med J* 2016;31(2):117-123.
- [2] Aletaha D, Neogi T, Silman AJ, et al. 2010 Rheumatoid arthritis classification criteria: an American College of Rheumatology/European League Against Rheumatism collaborative initiative *Annals of the Rheumatic Diseases* 2010;69:1580-1588.
- [3] Wolfe F, Clauw D, Fitzcharles MA, et al. The American College of Rheumatology Preliminary Diagnostic Criteria for Fibromyalgia and Measurement of Symptom Severity. *Arthritis Care Res* 2010;62:600-10.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.1864

SAT0122

EXPERIENCE OF MUSCULOSKELETAL ULTRASOUND SCANNING IMPROVES SKILL OF PHYSICAL EXAMINATION IN ASSESSMENT OF SYNOVITIS

A. Saku¹, S. Furuta¹, H. Furuya¹, K. Suzuki¹, M. Fukuta¹, S. Makita¹, T. Ito¹, K. Ikeda¹, H. Nakajima¹. ¹*Allergy and Clinical Immunology, Chiba university, Chiba, Japan*

Background: Assessment of presence/absence of joint swelling is one of the most essential factors in the management of rheumatoid arthritis (RA) patients. Although physical examination by touch is the basic assessment, it often varies among physicians. In contrast, it has been reported that musculoskeletal ultrasound (US) assessment is more objective and sensitive than physical examination in detecting synovitis.

Objectives: We hypothesized accumulation of experience of physical examination by touch with checking results of simultaneous US assessment as right answers could improve the accuracy of physicians' physical examination by touch. This study aimed to compare the accuracy of physicians' physical examination by touch according to physicians' US experience when considering the results of US assessment as right answers.

Methods: Seventy RA patients who planned to take US in daily clinical practice were enrolled. Twenty three physicians affiliated with Department of Allergy and Clinical Immunology at Chiba University Hospital were also participated in this study. Written informed consent was obtained from all the patients and physicians. At first plural physicians touched wrists, metacarpophalangeal (MCP) joints and proximal interphalangeal (PIP) joints and assessed swelling/non-swelling ("Ph swelling/non-swelling") of the joints. Subsequently, US assessment was performed by another physician blinded to the results of physical examination. In this study, "US swelling" and "US non-swelling" were defined as gray-scale imaging score (GS) 2 and GS 1. The positive predictive value (PPV) of physical examination by touch was calculated ("Ph swelling" joint count/"US swelling" joint count). Negative predictive value (NPV) was also calculated ("Ph non-swelling" joint count/"US non-swelling" joint count). The associated factors for PPV and NPV were identified by the univariate and multivariate logistic regression analysis.

Results: The patients were median 65 years old with median 5 year history of RA. A majority of the patients was rheumatoid factor positive (59/70) and median DAS28-CRP was 2.63.

A total of 6116 joints per physician were evaluated by touch, and the numbers of "Ph swelling" and "Ph non-swelling" joints were 990 and 5126. A total of 1540 joints were examined by US, the numbers of "US swelling" and "US non-swelling" joints were 172 and 1368. Overall PPV and NPV were 51.7% and 88.3%.

Regarding PPV, multivariate analysis identified duration of physicians' attending to rheumatology clinic, wrists, tender joints, patients' gender, patients' age and Steinbrocker Stage as significant factors increasing the accuracy and patients' disease duration as a significant factor decreasing the accuracy. Regarding NPV, multivariate analysis identified duration of physicians' US experience and patients' disease duration as significant factors increasing the accuracy and wrists, tender joints, presence of osteophytes and DAS28-CRP as significant factors decreasing the accuracy.

Conclusions: Experience of US improved accuracy of physicians' physical examination by touch in non-swelling joints and prevented overestimation, while experience of attending to rheumatology clinic rather than US improved the accuracy in swelling joints.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.3457

SAT0123

THE EFFECTS OF TRIMETHOPRIM-SULFAMETHOXAZOLE ON DISEASE ACTIVITY IN PATIENTS WITH RHEUMATOID ARTHRITIS

A. Onishi¹, K. Akashi¹, M. Hashimoto², W. Yamamoto², K. Murata², M. Katayama³, H. Amuro⁴, Y. Son⁴, S. Yoshida⁵, K. Nagai⁶, R. Hara⁷, K. Ebina⁸, T. Hirano⁹, Y. Yamamoto¹, H. Yamada¹, Y. Ichise¹, I. Naka¹, T. Okano¹, S. Takahashi¹, Y. Ueda¹, S. Sando¹, J. Saegusa¹, A. Morinobu¹, on behalf of ANSWER cohort study group. ¹*Department of Rheumatology and Clinical Immunology, Kobe University Graduate School of Medicine, Kobe;* ²*Department of the Control for Rheumatic diseases, Graduate School of Medicine, Kyoto University, Kyoto;* ³*Department of Rheumatology and Clinical Immunology, Osaka Red Cross Hospital;* ⁴*First Department of Internal Medicine, Kansai Medical University;* ⁵*Department of Internal Medicine (IV), Osaka Medical College;* ⁶*Department of Internal Medicine (IV), Kansai Medical University, Osaka;* ⁷*The Center for Rheumatic Diseases, Nara Medical University, Nara;* ⁸*Department of Orthopaedic Surgery;* ⁹*Department of Respiratory Medicine, Allergy and Rheumatic Disease, Graduate School of Medicine, Osaka University, Osaka, Japan*

Background: Some experimental models suggested bacterial infection, such as periodontal disease and gut microbiota, might be an inciting and aggravating factor in rheumatoid arthritis (RA)¹. Moreover, medications that have an antibacterial effect such as minocycline and sulfasalazine are used as DMARDs. However, the antibacterial effect itself on disease activity are unknown in patients with RA whereas trimethoprim-sulfamethoxazole (TMP-SMX) is often used for *Pneumocystis jirovecii* pneumonia (PCP) prophylaxis because PCP is a prevalent and potentially life-threatening opportunistic infection among patients with RA, especially in Japan^{2,3}.

Objectives: To identify the effect of TMP-SMX on disease activity in patients with RA in a multi-center cohort study (ANSWER cohort study).

Methods: RA patients with a sampling interval of less than 1 year and at least two assessment of disease activity were enrolled. Disease activity was assessed using disease activity score 28-CRP (DAS28-CRP). Linear mixed effect models were used to evaluate the trajectories of disease activity in RA patients. Time from baseline, TMP-SMX administration, and their interaction were included as fixed effects while participant identification number and time from baseline were included as random factors. Age, sex, disease duration, RF, ACPA, HAQ, and DMARDs were included as covariates.

Results: A total of 49878 samples (mean sampling interval: 49 days) from 3255 patients was included. The median age at baseline was 64.0 years (interquartile range, 53.0 to 71.0 years) with 78.2 % of women (ACPA positivity, 79.2%; RF positivity, 70.8 %). The median DAS28-CRP was 2.83 with 33.8 % of patients taking TMP-SMX at baseline. Patients with taking TMP-SMX had a significantly but minimally better longitudinal trajectory on disease activity than patients without (-0.00012/month, $P=0.009$). This result was similar even when patients taking sulfasalazine were excluded from analysis.

Evolution of disease activity over time based on ST use

Conclusions: TMP-SMX has minimal impact on disease activity, and therefore clinical utility of TMP-SMX for controlling disease besides PCP prophylaxis is limited. These results did not support a theoretical effect of bacterial infection on