Background: Musculoskeletal Ultrasonography (MSUS) is now a widely used tool for monitoring of rheumatoid arthritis (RA). Although there are many proposed sets of composite scores, a fixed set of joints may not be an ideal tool to assess a disease like RA, which affects many joints and tendons in different presentations. In previous study (1) U9 score was proven to be correlated with disease activity parameters.

Objectives: To determine whether US assessment using U9 score is useful for monitoring response to treatment for RA or not?

Methods: A prospective, multicenter study were conducted in period from July 2019 to December 2019. All recruited RA patients were subjected to: Disease activity assessment by clinical disease activity indices (CDAI and DAS28 ESR). Functional status assessment by (HAQ) and ultrasonographic assessment using U9 score which include 8 joints (bilateral wrists, 2nd MCP, 3rd MCP and kness and plus most clinically affected joint or tendon (one joint or one tendon). Most clinically affected joints from 48 joints. Any affected tendons could be choosing. All targetted joints were evaluated according to EULAR guidelines and by EULAR/OMERACT combined score (0-3). Targetted tendons were scored (0-3). All patients received their treatment (biologic and non biologic DMARDs) according to the decision of the treating physicians. No specific therapy is needed. CDAI and DAS28 ESR, HAQ and U9 score were repeated after 3 months to detect the response to change after receiving the therapy.

Results: One hundred and forty patients (23.6% were male) with mean age 39.26±11.30 were recruited from 4 tertiary referral university hospitals. There was a significant difference (<0.001) between the first and second visits as regards clinical, laboratory and ultrasonographic parameters. DAS 28 decreased form (5.29±1.21) to (3.95±0.99), ESR decreased from (42.12±15.24) to (26.84±13.32), HAQ2 improved from (0.65±0.35) to (0.51±0.237) and U9 total US score decreased from (13.56±5.16) to (8.02±4.28).

We found that the most suitable cut-off value of U9 score to predict high disease activity was 5.5 (sensitivity 83.2% and specificity 88%) and cut off value for moderate disease activity was 11.5 (sensitivity 85.7% and specificity 80.6%), cut off value for mild disease activity was 17 (sensitivity 87.2% and specificity 74.6%).

Conclusion: U9 ultrasonographic score is very useful method for evaluating the disease activity parameters at both visits (table 1).

Table 1. correlation between U9 ultrasonographic score and clinical parameters.

<table>
<thead>
<tr>
<th>U9 at 1st visit</th>
<th>U9 at 2nd visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAS-28 Pearson Correlation 0.806 0.790</td>
<td>(P value)&lt;0.001 &lt;0.001</td>
</tr>
<tr>
<td>CDAI Pearson Correlation 0.787 0.773</td>
<td>(P value)&lt;0.001 &lt;0.001</td>
</tr>
<tr>
<td>HAQ Pearson Correlation 0.431 0.317</td>
<td>(P value)&lt;0.001 &lt;0.001</td>
</tr>
</tbody>
</table>

Disclosure of Interests: None declared.


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DOI: 10.1136/annrheumdis-2020-eular.2396
needed to be re-structured. We removed the ART from the inpatient Electronic Medical Record i.e. Epic system so that only the ARP order remained. This would prevent repetitive testing and reduce healthcare costs through reduction by at least $12.0 per positive ANA result and may also translate into reduced length of hospital stay. We were able to add Centromere Antibody (Ab) to the ANA profile sub serologies to standardize it further as it is an important part of Scleroderma diagnosis.

References:


Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.1921

AB1123

PROGRESSION OF FINGER JOINT CARTILAGE DAMAGE EVALUATED BY ULTRASOUND IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Cartilage damage in rheumatoid arthritis (RA) has been evaluated by joint space narrowing (JSN) in X-ray, despite the fact that it is not a direct evaluation of cartilage. We have recently reported that direct evaluation of finger joint cartilage thickness evaluated by ultrasound (US) is valid and useful for patients with RA1). Objectives: In this study, we aimed to examine the progression of cartilage damage in RA patients.

Methods: Forty-six patients with RA who had completed the US evaluation of finger joint cartilage thickness at baseline and after 1 year were included in this study. The cartilage thickness of metacarpophalangeal (MCP) and proximal interphalangeal (PIP) joints of 2nd to 5th fingers were bilaterally visualized and measured at the middle portion of MCP and PIP joints from a longitudinal dorsal view, with approximately 90 degrees flexion. Cartilage thickness was measured from the base of the cartilage to the interface artefact at the cartilage surface by calculating the pixel counts on DICOM images.

Results: In patients, 78% were female, the median age was 68 years and the median disease duration of the patients was 6 years. The median DAS28-CRP at baseline was 2.6. The sum of total cartilage thickness from 16 joints per patient ranged from 3.1 to 9.1 mm (median 6.4 mm) at baseline, and it was significantly correlated with disease duration (p=0.423, p=0.003). A significant decrease from the baseline in the cartilage thickness (median -1.6%) was observed after 1 year (p=0.041). Furthermore, patients with persistently moderate/high disease activity for 1 year by DAS28-CRP (n=9) showed a greater decrease in the cartilage thickness than the remaining patients with controlled disease activity (n=37) (median -5.9% versus -1.5%, respectively, p=0.029).

Conclusion: This study further supported the validity and usefulness of joint cartilage thickness evaluation by US in patients with RA.

References:


Disclosure of Interests: Takehisa Ogura: None declared, Ayako Hirata: None declared, Sayaka Takenaka: None declared, Yuki Inoue: None declared, Takaharu Kagtagiri: None declared, Yuto Takakura: None declared, Hideki Ito: None declared, Hideto Kameda Grant/research support from: Abbvie, Asahi-Kasei,