Conclusion: The study highlighted that a reduced DLCO in lung function test is associated with a lung involvement in IRD. DLCO represented a potential screening parameter for lung manifestation in IRD. Especially patients with suspected vasculitis should receive an additional chest x-ray. Based on the high sensitivity of DLCO in combination with chest x-ray or HR-CT for the detection of ILD in IRD, all patients with a reduced DLCO (< 80%) should obtain an imaging of the lung.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.3224

THE ROLE OF ULTRASOUND CRITERIA IN ASSESSING PAIN SYNDROME IN THE KNEE JOINT IN PATIENTS WITH RHEUMATOID ARTHRITIS AND OSTEOARTHRITIS

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Background: Pain syndrome and pathological changes in the synovium detected by ultrasound can be early signs of various diseases of the joints [1].

Objectives: The use of ultrasound criteria for changes in the synovial membrane of the joint cavity to assess the severity of pain in patients with rheumatoid arthritis (RA) and osteoarthritis (OA).

Methods: The study included 36 patients with RA (32 women and 4 men aged 22 to 55 years old) and 38 patients with OA (30 women and 8 men aged 30 to 55 years old) with lesions of the joint knees. A visual analogue scale (VAS) was used to determine the severity of pain. The severity of pain in the knee when waking was at least 40 mm according to the VAS in all examined patients. Joint ultrasound examination was carried out according to the standard technique using a linear transducer with a frequency of 5–12 MHz, on an Acousys V10 ultrasound diagnostic system (Samsung Medison, South Korea). The evaluation of ultrasound changes in the upper inversion of a knee joint was carried out according to the following criteria: the severity of intra-articular effusion (1), synovial proliferation (2), local vascularization of the synovial membrane using power Doppler (3) (Table 1).

Table 1. Parameters of ultrasound criteria for assessing changes in the synovial membrane of the joint cavity

<table>
<thead>
<tr>
<th>Normal indicators</th>
<th>Minimum changes</th>
<th>Moderate changes</th>
<th>Severe changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - width of the suprapatellar turn is 6 mm</td>
<td>1 - delamination of the suprapatellar curl leaves from 7 to 9 mm</td>
<td>1 - delamination of the leaves of the suprapatellar twist 10-14 mm</td>
<td>1 - delamination of suprapatellar folds of more than 15 mm</td>
</tr>
<tr>
<td>2 - thickness of the synovial membrane is 3 mm (from the anterior approach)</td>
<td>2 - thickness of the synovial membrane 3.1–4.5 mm</td>
<td>2 - thickness of the synovial membrane 4.6–6.4 mm</td>
<td>2 - thickness of the synovial membrane more than 6.5 mm</td>
</tr>
<tr>
<td>3 - lack of vascularization loci</td>
<td>3 - appearance of single loci of vascularization (1-2 in the Doppler field)</td>
<td>3 - appearance of moderate (= 5) vascularization loci</td>
<td>3 - multiple foci of vascularization (&gt; 5, merging in places)</td>
</tr>
</tbody>
</table>

Results: Correlations of various severity were found between pain indices according to VAS and the thickness of the synovial membrane of the knee joint (r = 0.33, p = 0.019) and the number of vascularization foci (r = 0.29, p = 0.04) in RA patients, as well as between pain according to VAS and the severity of intra-articular effusion (r = 0.28, p < 0.002) in patients with OA.

The patients were divided into three groups according to the severity of pain in the knee joint: group I - 41–59 mm (12 patients with OA and 9 patients with RA), group II - 60–79 mm (16 patients with OA and 12 patients with RA), group III - 80–100 mm on the VAS scale (10 patients with OA and 15 patients with RA). Group I was dominated by OA patients with minimal changes in intra-articular effusion and local vascularization of the synovial membrane, with moderate synovial proliferation (28.6% of the total number of patients in the group). In group II patients with OA with moderate severity of intra-articular effusion and local vascularization (21.4%) and patients with RA with moderate changes in the thickness of the synovium and local vascularization (25%) were equally common. Group III was dominated by RA patients with severe synovial proliferation and moderate local vascularization (28%), as well as patients with OA with moderate intra-articular effusion (20%).

Significant differences in the thickness of the synovium in patients with RA in the first and third groups were noted (H-test = 5.9, p = 0.025).

Conclusion: The additional use of ultrasound criteria for changes observed in the synovial membrane of the joint cavity in patients with RA and OA can help predict pain in the knee joint. The manifestation of pain syndrome in patients with OA is most associated with the severity of synovitis in the joint, and in patients with RA - with the severity of synovial proliferation.