mild and moderate-severe pathological MSGUS exam. These data sug-
gest that there could be differences for antiRo50, AntiLa and ESSPRI
variables even though statistical significance was not achieved (p>0.150 in
all associations explored). No differences have been found for RF, C3
and C4 hypocomplementemia, ESR, CRP and ESSDAI variables (table1).

**Conclusion:** In this series of patients, a statistically significant association
was found between the positivity of anti-Ro antibodies, hypergammaglobu-
linemia and MSGUS, as well as its subdivision by pathological grades.
No statistical significant association was found between MSGUS and posi-
tivity of antiRo60 and antiLa antibodies and ESSPRI, probably due to
the small sample size. There were no differences for the rest of the varia-
bles analyzed (RF, complement, acute phase reactants and ESSDAI).

**REFERENCES:**

[1] Ultrasonography of salivary glands—a highly specific imaging procedure for
diagnosis of Sjögren’s syndrome Dirk Wernicke J Rheumatol. 2008 Feb;35

[2] ...ultrasound in the diagnostics of Sjögren’s syndrome.

**TABLE 1. ASSOCIATION BETWEEN MSGUS GRADES AND THE ANALYZED
VARIABLES**

<table>
<thead>
<tr>
<th>MSGUS</th>
<th>NORMAL</th>
<th>GRADE 2 (MILD)</th>
<th>GRADE 3 (MODERATE)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>AntiRo 52%</td>
<td>21</td>
<td>38</td>
<td>71</td>
<td>0.004</td>
</tr>
<tr>
<td>AntiRo 60%</td>
<td>32</td>
<td>44</td>
<td>62</td>
<td>0.150</td>
</tr>
<tr>
<td>AntiLa%</td>
<td>21</td>
<td>28</td>
<td>48</td>
<td>0.163</td>
</tr>
<tr>
<td>Hypergammaglobulinemia</td>
<td>16</td>
<td>53</td>
<td>76</td>
<td>0.001 %</td>
</tr>
<tr>
<td>Rheumatoid factor%</td>
<td>47</td>
<td>31</td>
<td>52</td>
<td>0.460</td>
</tr>
<tr>
<td>Hypocomplementemia</td>
<td>11</td>
<td>6</td>
<td>5</td>
<td>0.757</td>
</tr>
<tr>
<td>C4%</td>
<td>11</td>
<td>10</td>
<td>19</td>
<td>0.555</td>
</tr>
<tr>
<td>ESR mean</td>
<td>31</td>
<td>34</td>
<td>38</td>
<td>0.094</td>
</tr>
<tr>
<td>CRP mean</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>0.059</td>
</tr>
<tr>
<td>RF mean</td>
<td>10</td>
<td>9</td>
<td>17</td>
<td>0.229</td>
</tr>
<tr>
<td>ESSPRI mean</td>
<td>5</td>
<td>5.5</td>
<td>6.3</td>
<td>0.349</td>
</tr>
<tr>
<td>ESSDAI mean</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>0.078</td>
</tr>
</tbody>
</table>

Disclosure of Interests: None declared

**FR10634**

**STANDARD REFERENCE VALUES FOR METACARPAL HEAD CARTILAGE THICKENING BY
ULTRASOUND IN HEALTHY SUBJECTS**

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of Medicine, Prague, Czech Republic

**Background:** The hyaline cartilage of metacarpal head (MH) is frequently
involved in patients with chronic arthritis. Moreover, in a recent study a
high correlation has been found between the anatomical and sonographic
(US) measurements of hyaline cartilage1. However, only very few data
are available on the prevalence of pathological findings and the standard
reference values in healthy subjects (H).

**Objectives:** To determine the prevalence of the US abnormalities at
metacarpal head (MH) in H, and to measure MH cartilage thickness (CT) in
order to provide standard reference values.

**Methods:** US examinations were performed on 944 metacarpophalangeal
(MCP) joints of 118 consecutive H using a MyLab Two (Esaote Bio-
medica, Genoa, Italy), equipped with a high frequency probe (up to 22
MHz). H were recruited among the staff of Rheumatology Department of
the “Carlo Urbani” Hospital (Jesi, Ancona, Italy), students in medicine and
patients’ healthy relatives. Exclusion criteria were: hand pain (VAS score
>1/10) or stiffness in the previous month or hard tissue enlargement of
MCP, proximal and distal interphalangeal joints.

The MH hyaline cartilage from II to V digits of both hands was scanned with
the MCP joints in maximal flexion in longitudinal and transverse dor-
sal views, paying attention on measuring an angle of 90° between
direction of the US beam and the cartilage surface2, CT was scored
both semi-quantitatively (using a five-grade scoring system3) and quantita-
tively (using the mean value of longitudinal and transverse measurements
of the CT). Moreover, the presence of osteophytes and bone erosions
was recorded.

The association between CT and demographic data was analyzed.

**Results:**

- **Semiquantitative score:** Cartilage damage was found in 21 out of 118 H
  (17.8%) and in 59 out of 944 MHs (6.3%): grade 1 and grade 2 in 43
  (4.6%) and in 16 (1.7%), respectively. No grades 3 and 4 were detected.
  Osteophytes and bone erosions were respectively found in 12 (10.1%)
  and in 8 (6.7%) out of 118 H and in 24 (2.5%) and in 12 (1.3%) out
  of 944 MHs.

  A slight correlation between semi-quantitative score and the presence of
  osteophytes was found (r=0.16, p<0.01). No association between bone
  erosion and cartilage thinning was found.

**Disclosure of Interests:** None declared
Quantitative assessment: A significantly thicker cartilage was found in males [0.71±0.10 mm (mean±SD)] than in females [0.68±0.12 mm, (mean±SD)] (p<0.01). No significant difference was found between left and right side for each digit (p>0.05).

CT value of the II MH was significantly greater than the one of the other fingers (p<0.01). No difference was found between the CT values of III, IV and V MH (p<0.05).

There was a significant association between the CT value and gender (r=0.39; p<0.01), age (r=-0.33; p<0.01), height (r=0.28; p<0.01) and grade of the semiquantitative scoring system (r=-0.19; p<0.01). No correlation was found between the CT value and weight (p=0.20).

Conclusion: This study confirms the presence and provides data on the prevalence of US abnormalities at MH level in healthy individuals. Moreover, normal values for US CT of MH were reported.

REFERENCES:

Disclosure of Interests: None declared

FR0635 ULTRASOUND IN THE ASSESSMENT OF TENOSYNOVITIS IN JUVENILE IDIOPATHIC ARTHRITIS: SYSTEMATIC LITERATURE REVIEW

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Background: Tendon involvement is common in patients with juvenile idiopathic arthritis (JIA). Differentiating tenosynovitis and underlying arthropathies may be challenging on the basis of clinical examination (CE) alone. In daily clinical practice, ultrasound (US) imaging with Doppler information can be more versatile as it allows a dynamic assessment of joint inflammation and can be done quickly at the bedside. US displays the calcium-containing cortical and trabecular bone substance. While gaining signal from the bone marrow – allows only an indirect depiction of the cortical bone and sclerotic areas. Computed tomography (CT) is considered to be the gold standard as it displays the calcium-containing cortical and trabecular bone substance. However, the exhibited radiation exposure in CT limits its application in the clinical routine. Susceptibility weighted imaging (SWI) is an advanced MRI technique, that is able to visualise calcium due to its magnetic properties and allows a reconstruction of CT-like images without radiation exposure.

Objectives: To investigate the diagnostic accuracy of CE and Doppler ultrasound for the detection of structural lesions of the SI joint.

Methods: Twenty-two patients with suspicion of or known sSpA were included. All patients underwent a 1.5-Tesla-MRI including T1 and SWI sequences and a low-dose CT of the sacroiliac joints. CT images were reconstructed in 4 mm oblique coronal reconstructions matching the orientation and slice thickness of the MRI. MRI and CT images were scored for erosions, sclerosis and joint space alterations applying the 24 regions method, a modification of the Berlin score. (2) Using CT as standard of reference, sensitivity (SE) and specificity (SP) values were calculated on patients’ level. A score of 2 or higher in any quadrant was considered positive. The sumscores of T1 and SWI were compared to CT using Pearson’s test.

Results: The mean erosion sumscore was 5.5 ± 5.5, 6.3 ± 8.2 and 5.9 ± 9.2 for T1, SWI and CT respectively. The mean sclerosis sumscore was 0.78 ± 1.5, 5.5 ± 6.5 and 6.9 ± 6.9. Five patients had joint space alterations (pseudowidening or ankylosis) in CT. Both, T1 and SWI showed an SE of 100% and a SP of 84.5% for erosions, however, the erosion sumscore correlated better for SWI (Pearson’s r: 0.93) than for T1 (r: 0.64). With respect to sclerosis T1 (SE 30%, SP 100%, r 0.42) was inferior to SWI (SE 90%, SP 92%, r 0.81). It was also less

REFERENCES:

Disclosure of Interests: PAZ COLLADO: None declared, Silvia Magni-Manzoni Consultant for: Abbvie, Speakers bureau: Abbvie, MARTINA STEINER: None declared, Tracy Ting : None declared, Patricia Vega Fernandez: None declared, Clara Malatia: None declared, Ana Rodriguez: None declared, George Bruyn : None declared, Helen Keen: None declared, Lene Terslev Speakers bureau: Speakers fee from : Roche, Novartis, Pfizer, MSD, BMS, Celgene

FR0636 SUSCEPTIBILITY WEIGHTED SEQUENCES IN MAGNETIC RESONANCE IMAGING CAN CREATE COMPUTED TOMOGRAPHY-LIKE IMAGES AND IMPROVE THE ACCURACY OF STRUCTURAL LESION DETECTION OF THE SACROILIAC Joints IN AXIAL SPONDYLOARTHRITIS

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Background: In patients with axial spondyloarthritis (axSpA) the accurate depiction of structural lesions in magnetic resonance imaging (MRI) is impeded because MRI – while gaining signal from the bone marrow – allows only an indirect depiction of the cortical bone and sclerotic areas. Computed tomography (CT) is considered to be the gold standard as it displays the calcium-containing cortical and trabecular bone substance, however, the exhibited radiation exposure in CT limits its application in the clinical routine. Susceptibility weighted imaging (SWI) is an advanced MRI technique, that is able to visualise calcium due to its magnetic properties and allows a reconstruction of CT-like images without radiation exposure.

Objectives: To investigate the diagnostic accuracy of CT-like images generated from SWI for the detection of structural lesions of the SI-joint.

Methods: Twenty-two patients with suspicion of or known axSpA were included. All patients underwent a 1.5-Tesla-MRI including T1 and SWI sequences and a low-dose CT of the sacroiliac joints. CT images were reconstructed in 4 mm oblique coronal reconstructions matching the orientation and slice thickness of the MRI. MRI and CT images were scored for erosions, sclerosis and joint space alterations applying the 24 regions method, a modification of the Berlin score. (2) Using CT as standard of reference, sensitivity (SE) and specificity (SP) values were calculated on patients’ level. A score of 2 or higher in any quadrant was considered positive. The sumscores of T1 and SWI were compared to CT using Pearson’s test.

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