Abstract FRI0555 – Table 1. Mean SVW and differences in the examined muscles between myositis patients and controls

<table>
<thead>
<tr>
<th>Muscle</th>
<th>Shear wave velocity (m/s)</th>
<th>Mean difference (95% CI)</th>
<th>Difference percentage</th>
<th>Significance (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Healthy</td>
<td>Myositis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vastus lateralis</td>
<td>1.74</td>
<td>1.42</td>
<td>-0.32 (-0.19, 0.46)</td>
<td>18.4%</td>
</tr>
<tr>
<td></td>
<td>Rectus femoris</td>
<td>1.77</td>
<td>-0.12 (-0.24, 0.02)</td>
<td>13.6%</td>
</tr>
<tr>
<td></td>
<td>Vastus medialis</td>
<td>1.66</td>
<td>-0.21 (-0.31, 0.00)</td>
<td>12.7%</td>
</tr>
<tr>
<td></td>
<td>Vastus intermedius</td>
<td>1.89</td>
<td>-0.29 (-0.41, 0.04)</td>
<td>15.3%</td>
</tr>
<tr>
<td></td>
<td>Biceps brachii</td>
<td>1.94</td>
<td>-0.15 (-0.31, 0.01)</td>
<td>7.7%</td>
</tr>
<tr>
<td></td>
<td>Biceps femoris</td>
<td>1.73</td>
<td>-0.35 (-0.42, 0.03)</td>
<td>20.2%</td>
</tr>
<tr>
<td></td>
<td>Semitendinosus</td>
<td>1.72</td>
<td>-0.27 (-0.35, 0.02)</td>
<td>15.7%</td>
</tr>
<tr>
<td></td>
<td>Semimembranosus</td>
<td>1.75</td>
<td>-0.37 (-0.42, 0.05)</td>
<td>21.1%</td>
</tr>
</tbody>
</table>

Conclusions: Muscle elasticity in myositis patients has been shown to be 21% lower in comparison to healthy participants and seems to moderately correlate with disease activity, muscle strength and function. To our knowledge, this is the first study to show that shear wave elastography can detect changes in muscle elasticity in myositis patients. Further validation is required to evaluate the value of this novel ultrasound technology as an imaging biomarker for myositis.

Disclosure of Interest: None declared


FRI0556

AUTOMATED SCORING OF KNEE OSTEOARTHRITIS (OA) ON ROUTINE RADIOGRAPHS IDENTIFIES DISEASE SEVERITY IN OA

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Background: Knee osteoarthritis (OA) causes pain and limited function of the knee, linked to cartilage loss, bone remodelling and inflammation1. Objectives: We aimed to find out whether joint space measures can stratify patients into mild and advanced OA using an automated scoring tool.

Methods: 86 weight-bearing radiographs (target joint: 41 left, 45 right knee) were analysed by using ImageJ (Bioppy Lab software (JX)). Automated joint space (JS) measures were joint space width (JSW), minimum height (minH) and joint space area/region of interest (JSA/ROI, in mm²). JS measures were compared against measures were joint space width (JSW), minimum height (minH) and joint space

Abstract FRI0556 – Figure 1. Boxplots showing the relationship between stage of OA (mild and advanced) and (A) medial JSA/ROI, (B) lateral JSA/ROI

Conclusions: Medial joint space measures are possible markers for identifying the stage of disease if only radiographs were used. In particular, medial JSA/ROI may be utilised as an automated tool for characterising patient severity.

REFERENCES:

Acknowledgements: The software for this analysis was provided by ImageJ and all analyses were performed independently at St George’s, University of London.

Disclosure of Interest: None declared


FRI0557

THERMOGRAPHIC ANALYSIS OF HANDS AND WRISTS OF RHEUMATOID ARTHRITIS PATIENTS

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Background: Thermography has been utilised in a number of studies in rheumatoid arthritis (RA), however there is a paucity of evidence as regards to the possibility of applying this non-invasive technology to the detection of synovitis of the hands and wrists. With normative data having been already published, it is now possible to compare the thermographic characteristics of RA patients without active synovitis to those with a normal thermal distribution in order to determine the baseline characteristics of RA hands and wrists. This would consequently provide a foundation against which further studies investigating RA patients with synovitis can be compared.

Objectives: To determine whether rheumatoid arthritis (RA) patients without active synovitis in their hands exhibit different baseline thermographic patterns of the fingers and palms when compared to healthy individuals.

Methods: Data from 31 RA patients were compared to 51 healthy controls. Inclusion criteria were confirmed absence of synovitis by clinical examination and musculoskeletal ultrasound in rheumatoid patients. Thermographic imaging of the regions of interest (ROIs) were obtained as per established protocols. Significant differences were found between the mean temperatures of the palm regions and fingers of their RA counterparts (p=0.001), with the latter group exhibiting higher temperatures in all ROIs. No significant differences were found between ROIs of the palms and fingers of both hands in either group. Logistic regression models confirm that both palm and finger temperature increase significantly in RA.
Conclusions: RA patients without active inflammation of the hands demonstrate a significantly higher mean temperature compared to healthy individuals. These findings provide evidence that baseline thermal data in RA differ significantly from healthy individuals. Thermal imaging may have the potential to become an adjunct assessment method of disease activity in patients with RA.

REFERENCES:

Disclosure of Interest: None declared

FR0I560 QUANTITATIVE CT INDEXES IN THE EVALUATION OF INTERSTITIAL LUNG DISEASE RELATED TO RHEUMATOID ARTHRITIS
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Background: In rheumatoid arthritis (RA), interstitial lung disease (ILD) is the most common pulmonary complication and it is associated with poor prognosis. The gold standard to detect ILD is the chest Computed Tomography (CT). CT semiquantitative scoring and quantitative methods are used to estimate the extension of ILD; however the first ones are time consuming and they have a considerable inter/intra-observer variability. Quantitative scores are based on the detection of the parameters of distribution of lung attenuation (also called quantitative CT indexes – QCTi).

Main aim is to investigate if in RA-ILD there is a correlation between QCTi calculated through an open-source software and the gold standard to detect ILD is the chest Computed Tomography (CT). CT semiquantitative scoring and quantitative methods are used to estimate the extension of ILD; however the first ones are time consuming and they have a considerable inter/intra-observer variability. Quantitative scores are based on the detection of the parameters of distribution of lung attenuation (also called quantitative CT indexes – QCTi).

Previously a good correlation between QCTi calculated through an open-source software and the gold standard to detect ILD is the chest Computed Tomography (CT). CT semiquantitative scoring and quantitative methods are used to estimate the extension of ILD; however the first ones are time consuming and they have a considerable inter/intra-observer variability. Quantitative scores are based on the detection of the parameters of distribution of lung attenuation (also called quantitative CT indexes – QCTi).