anti-FHL1 (n=25) and in anti-FHL1 (n=6) from the cross-sectional analyses. One HC had positive anti-FHL1 titers. We subdivided the patients into 4 groups: anti-FHL1 “highly positive” (O.D.>1, n=1), “intermediate positive” (1>O.D.>0.75, n=6), “baseline negative” that seroconverted to anti-FHL1 within the first 36 months. The anti-FHL1 “negative” group presented constant low antibody titers during the longitudinal follow-up.

Conclusion: Anti-FHL1 antibody positivity was detected in patients with high titters of anti-FHL1 autoantibodies in the first available serum sample or developed within the first 36 months after diagnosis and persisted over many years. A group of patients with intermediate levels had fluctuating positivity over the years. It is still unknown if the anti-FHL1 antibody titer is a marker of prognosis and/or damage in IM; thus, clinical data needs to be addressed, and in-vitro experiments and biochemical characterization of this autoantibody are still required.

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APPLYING THE OMERACT TRUTH FILTER TO A NEW PROPOSAL OF CORE OUTCOME DOMAINS IN MIXED AXIAL SPONDYLOARTHRITIS BASED ON INERTIAL MEASUREMENT UNIT (IMU) SENSORS

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Background: Loss of spinal mobility is one of the most characteristic problems for people with axial spondyloarthritis (axSpA) and is predictive of loss of function. Traditional measures such as the BASMI fail to capture many elements of spinal mobility and lack responsiveness to change. Inertial Motion Unit (IMU) sensors can be used to accurately measure spinal movement without requiring significant operator expertise.

Objectives: The primary objective of this study was to test the reliability of these new tools in patients with axSpA and to develop a new composite spinal mobility index.

Methods: Patients with axSpA fulfilling ASAS classification criteria were recruited. VMove system was used to obtain ROM by attaching two IMU sensors at the cervical (Occiput-T3) and lumbar spine (L1-Sacrum). Intra-rater, inter-rater and test-retest reliability of IMU tests were assessed by intraclass correlation coefficients (ICC). The maximum range of movement for anterior flexion/extension (AFE), lateral flexion (Left+Right) and rotation (Left+Right) were obtained for the lumbar and cervical region. These six values were used in a composite score (IMU-ASMI) which referenced equivalent ROM values from normal subjects in an earlier criterion validity study. Pearson correlation coefficients with BASFI were calculated for each component as well as the overall score.

Results: The study included 40 patients (12 females, 28 males) with a mean age of 48 (range 23-75). Subjects had a wide range of severity of axSpA. The mean BASMI was 4.8 (range 0.7 to 9.2, SD 1.9). The mean IMU-ASMI was 4.0 (range 0.7 to 9.2, SD 2.1). The sensor based measures had good to excellent reliability (Table 1) and correlated closely with BASMI (r=0.79). The mean BASMI was 4.6 and the IMU-ASMI correlated closely with BASFI (r=0.71).

Face Validity: Each IMU test presents spinal movement in angles and can also be represented as a normalized severity index analogous to the BASMI. The mean cervical and lumbar IMU-ASMI were 3.5 and 4.4 units, respectively.

Construct validity: Do IMU movements correlate with their corresponding traditional measurements? As expected, the closest correlations were between IMU and goniometer cervical rotation (r=0.83) and between IMU and tape measure lumbar side flexion (r=0.84). Correlations between Schober’s test and IMU lumbar AFE and between tragus to wall and IMU cervical FE were moderate (r=0.62, 0.65).

Do IMU movements correlate with BASFI? Correlation coefficients were as follows: lumbar AFE -0.57; rotation -0.59; side flexion -0.45; cervical F/E -0.55; rotation -0.61; side flexion -0.39. BASFI correlations with BASMI were comparable.

Content Validity: Three major floor and ceiling effects issues were found in the composite indices. Intra-rater distance (BASMI) represented hip rather than spinal mobility, but it correlates with BASFI and is not in the IMU-ASMI. IMU-ASMI includes lumbar rotation which accounts for 27% (0.53%) of the lumbar mobility score.

REFERENCES


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PROPOSAL OF CORE OUTCOME DOMAINS IN MIXED CRYOglobulinemic VASCULITIS

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Background: Cryoglobulinaemic vasculitis is immune complex mediated vasculitis of medium and small-size vessels. This vasculitis involves mainly kidneys, peripheral nervous system, skin and joints. Currently, no standardised outcome measures are available for the evaluation of treatments in patients with cryoglobulinemic vasculitis.

Objectives: To identify a core set of outcome measure (what to measure) for clinical studies for mixed cryoglobulinemic syndrome, following the OMERACT filter 2.0. [Ref]

Methods: A search was made in Medline (via PubMed) and Embase using a standardized search [filter https://omeracthandbook.org/]. This review considered studies that included patients with Mixed (type 2 and 3) cryoglobulinemic syndrome, any type of outcome measures, articles in

Table 1. Results of ICC for different IMU spinal mobility tests

<table>
<thead>
<tr>
<th>Movement</th>
<th>AFE</th>
<th>Lat</th>
<th>Rot</th>
<th>AFE</th>
<th>Lat</th>
<th>Rot</th>
<th>IMU-ASMI</th>
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<tr>
<td>Intra-rater</td>
<td>0.95</td>
<td>0.87</td>
<td>0.97</td>
<td>0.89</td>
<td>0.84</td>
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<tr>
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<td>0.91</td>
<td>0.94</td>
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