Conclusions: There was no marked difference in the US findings and the disease activity between the tendon sheath synovium and the joint synovium. However, there were differences in the local disease activities between the synovia. These results show that the tendon sheath synovium lacked acute inflammation.

Disclosure of Interest: None declared

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FRI0010 PREDICTION OF RADIOGRAPHIC PROGRESSION IN PATIENTS WITH RHEUMATOID ARTHRITIS BY BOTH MAGNETIC RESONANCE IMAGING AND ULTRASOUND

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Background: Magnetic resonance imaging (MRI) and ultrasound (US) are both useful modality to monitor disease status of RA whereas combination analysis of disease course by both modalities are quite few.

Objectives: To clarify the predictors of radiographic progression in patients with RA examined by both MRI and US.

Methods: Thirty-three patients with active RA, managed with a treat-to-target strategy and checked disease activity score every three months along with examination of both MRI and US, were enrolled from June 2010 to June 2016 and observed for 12 months. US of wrist and finger joints was examined every three months, MRI and radiograph were done every six months. US were evaluated by synovitis score of semi-quantitative manner by gray-scale (GS) and power Doppler (PD) proposed from EULAR. In MRI, synovitis, bone oedema and bone erosion were assessed by the Rheumatoid Arthritis Magnetic Resonance Imaging Scoring system (RAMRIS). Radiographic bone erosion and joint space narrowing (JSN) were scored by Genant-modified Sharp Score (GSS). Radiographic progression was defined as delta radiographic score >0.5. Multivariate analysis was employed to clarify independent predictors for radiographic progression at 12 month.

Results: Thirteen patients were treated with methotrexate monotherapy and eighteen were received combination of methotrexate and biologics. Three were given biologic monotherapy. Median of age was 57.0 years and that of disease duration was 9 months. Female was 84.8%, positive rate of RF was 87.1% and that of ACPA was 79.3%. DAS28-CRP was 4.20, total GS score 6.0, total PD score 4.0, MRI synovitis score 6.0, MRI bone oedema score 3.0, MRI bone erosion score 3.0, and GSS score 1.0 at baseline. Radiographic progression was found in 12 patients. Multivariate analysis revealed that high MRI bone oedema score at baseline, high MRI bone oedema score and PD $\geq$ grade 2 articular synovitis at any joints at 6 month were associated with radiographic progression at 12 months. Clinical indices of DAS28-CRP at any point did not predict radiographic progression compared with MRI or US.

	odds ratio	95% CI	p-value
MRI bone edema score at 0m	1.52	1.06-2.17	0.02
CRP at 0m	4.75	0.29-77.74	0.28
GSS JSN at 0m	1.05	0.80-1.38	0.72

MRI bone edema score at 6m	1.37	1.04-1.81	0.03
CRP at 6m	7.00	0.96-51.15	0.06

PD $\geq$ grade 2 at 6m	13.84	1.84-104.03	0.01
CRP at 6m	8.24	0.59-115.45	0.12

Conclusions: During treat-to-target strategy, the presence of MRI bone oedema as well as PD $\geq$ grade 2 articular synovitis are found to be important to predict radiographic outcome in active RA patients. These imaging indices may be more sensitive to monitor radiographic progression as compared with clinical indices.

Disclosure of Interest: None declared

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FRI0011 ULTRASONOGRAPHIC CRITERIA FOR THE DIAGNOSIS OF EROSION RHEUMATOID ARTHRITIS DISEASE USING OSTEOARTHRITIC PATIENTS AS CONTROLS COMPARED TO VALIDATED RADIOGRAPHIC CRITERIA

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Background: Rheumatoid arthritis (RA) is the most prevalent chronic inflammatory joint disease^{1,2} responsible for structural damage. Radiography (RX) is considered as the gold standard for visualising and quantifying bone lesions in RA.³ Musculoskeletal ultrasound (US) is booming in clinical practice for the diagnosis of RA. US can detect more erosions than RX at the joint level, especially at an early stage of the disease.⁴

Objectives: To determine thresholds for the diagnosis of erosive RA by US in RA and osteoarthritic (OA) patients and to compare these US thresholds with RX ACR/EULAR 2013 criteria for erosive RA.

Methods: Patients fulfilling ACR 1987 and/or ACR/EULAR 2010 criteria for RA or hand OA criteria were prospectively included. A modified Sharp erosion score was assessed by two blinded readers and one adjudicator for discordant cases (number of eroded joints $\leq$ three). Erosions in US were scored on six bilateral joints (MCP2-3, 5; MTP2-3, 5) with a four-grade scale to calculate total US score for erosions (USSE).

Results: A total of 168 patients were included: 122 RA (32 early RA <2 years; 90 late RA $\geq$ 2 years); 46 OA patients. On RX: 42 RA patients (6 early; 36 late) and 5 OA patients were eroded according to ACR/EULAR 2013 criteria with sensitivity at 34.4% and specificity at 89.1%. On US, 95 RA patients (21 early; 78 late) and 12 OA patients were eroded. Considering at least two joint facets eroded or at least one joint facet eroded at grade 2 on US, sensitivities were good (68%–72.1%) and specificities excellent (89.1%–100%). Agreement between RX and US was excellent (90%–92%). US diagnosed two times more patients than RX as erosive disease in both early and late RA patients.

Conclusions: USSE can differentiate RA from OA in erosive disease and detect two times more patients with erosive RA than RX with excellent specificity and agreement, according to two different criteria (number of facets eroded and severity of erosion at the joint facet level).

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FRI0012 SHARING THE BURDEN OF RHEUMATOID ARTHRITIS THROUGH REMOTE MONITORING OF RHEUMATOID ARTHRITIS (REMORA): IMPLICATIONS FOR PATIENTS AND CLINICIANS

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Background: People living with rheumatoid arthritis (RA) experience continuous, daily symptoms that fluctuate over time. Clinical decisions made by healthcare