Table 1. Interscan agreement between two WBMRI examinations performed with a one-week interval for all participants

		%-agreement	Kappa	ICC
WBMRI; Peripheral	Synovitis	Feet	96	0.83
		Hands	96	0.84
		Shoulders	92	0.54
		Pelvis	97	0.94
		Knees	87	0.64
	Joint BME	All	95	0.82
		Feet	98	0.84
		Hands	99	0.87
		Shoulders	95	0.87
		Pelvis	99	0.95
	Entheseal STI	Knees	100	0.97
		All	98	0.88
		Feet	98	0.96
		Hands	NA	NA
		Shoulders	95	0.27
	Entheseal BME	Pelvis	96	0.82
		Knees	97	0.75
		All	97	0.79
		Feet	96	0.59
		Hands	NA	NA
WBMRI; Spine	BME	Shoulders	96	0.70
		Pelvis	99	0.40
		Knees	100	0.87
		All	98	0.71
		All	100	0.99
	Fat	All	100	0.99
		Erosion	100	1.00
		New bone formation	100	1.00
		All	100	1.00

BME: bone marrow edema, STI: soft tissue inflammation, ICC: intraclass correlation coefficient

Figure 1: Percentage of participants with pathologies in the examined joints and entheses

Table 2. Intra- and interreader agreement for ten participants (4 PsA, 3 RA, 3 HC)

INTRAREADER		%-agreement	Kappa	ICC
WBMRI; Peripheral	Synovitis	90	0.58	0.87
	Joint BME	97	0.52	0.45
	Entheseal STI	92	0.67	0.85
	Entheseal BME	97	0.08	0.14
	BME	100	0.93	0.99
WBMRI; Spine	Fat	99	0.91	0.99
	Erosion	100	1.00	1.00
	New bone formation	100	1.00	1.00
INTERREADER		%-agreement	Kappa	ICC
WBMRI; Peripheral	Synovitis	84	0.41	0.85
	Joint BME	97	0.72	0.91
	Entheseal STI	93	0.41	0.74
	Entheseal BME	97	0.34	0.35
	BME	100	0.93	0.67
WBMRI; Spine	Fat	99	0.82	0.97
	Erosion	100	0.83	0.91
	New bone formation	98	0.17	0.23

BME: bone marrow edema, STI: soft tissue inflammation, ICC: intraclass correlation coefficient

Figure 2: Percentage of participants with pathologies in the spine

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THU0617

WRIST ULTRASOUND (US) PATHOLOGY IN EARLY RHEUMATOID ARTHRITIS (RA); OBSERVATIONS FROM AN EARLY INFLAMMATORY ARTHRITIS (EIA) DIAGNOSTIC SERVICE

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Background: To ensure a timely diagnosis of RA, diagnostic US is increasingly being utilized to detect subclinical pathology in order to implement treatment plans rapidly. There are several 'optimal' synovitis scoring protocols in the literature but a consensus regarding a definitive system still eludes us. There are few studies that have focussed specifically on wrist US pathology in early RA. Hence, we assessed what the common wrist US pathologies are in patients diagnosed with early RA.

Objectives: To identify the patterns of wrist US abnormalities seen in patients diagnosed with early RA from our EIA service in a large urban London hospital.

Methods: Retrospective service review of patients seen in the EIA US diagnostic service at Croydon Health Services in South London. Patients diagnosed with RA (EULAR/ACR 2010 criteria) with wrist US synovitis/tenosynovitis (EULAR-OMERACT definitions) between Jan2017-Dec2018 were included. The US protocol in the EIA diagnostic service includes lateral and dorsal (long axis & short axis views) of the ulnocarpal(UCJ) & radiocarpal(RCJ) joints with views covering the radioulnar joints & ulnar-styloids and views of the extensor & flexor tendons. Images and reports were reviewed and correlations with rheumatoid factor(RhF), anti-CCP antibodies(CCP), CRP & ESR were also assessed.

Results: 86 patients with RA (meeting EULAR-ACR criteria) were found to have wrist pathologies on US. The commonest finding (36%) was moderate (grade 2) greyscale(GSUS) synovitis in the UCJ with almost all having moderate (grade 2) power Doppler(PDUS) synovitis (32%). Only a few (5/86) had more severe pathology with GSUS/PDUS (grade 3). 22% (19/86) had milder changes GSUS grade 1 with three quarters of these patients having concomitant PDUS signal. Just under 10% had RCJ US synovitis and 3 cases had radioulnar joint synovitis. Only 6% of the cohort had whole wrist joint involvement. Erosions were very uncommon (2/86). In total just under 25%(21/86) had tendon disease with roughly 70% affecting 1 tendon compartment and the others affecting 2 or more. Of those with tendon pathology, the two most commonly affected tendons were the 2nd [48%(10/21)] and 4th [38%(8/21)] extensor compartments. Extensor tenosynovitis was more common than flexor(26 v 4 cases). US synovitis 'only' was seen in 76%, US tendon disease 'only' in 7% and concomitant pathology in 17%. Correlation with inflammatory markers was not seen with only 3 patients presenting with significantly elevated CRP (>15) and ESR (>20). Though CCP was more commonly seen compared to RhF(32% vs 17%), just over half did not have positive antibodies.

Conclusion: Our observational study found that in early RA, mild-to-moderate GSUS and PDUS in the UCJ is the commonest wrist US pathology with tenosynovitis of the 2nd and 4th extensor compartments. Severe disease and erosions were very uncommon. The pattern of these US wrist pathologies are likely to reflect the initial disease course of these patients that present to our EIA service (i.e. early RA patients). Furthermore, biochemical markers do not seem to be useful in these patients and serology may not be present in over 50%. Therefore, clinicians who are running EIA diagnostic services with US should be expectant of milder-to-moderate US findings when diagnosing early RA and not be misled by the absence of more severe findings. Our understanding of US pathologies in the RA disease course therefore needs to be more nuanced and further work in other specific joint areas may help to elaborate what US pathology is most common in early RA.

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THU0618

CLINICAL COMPARISON BETWEEN MAGNETIC RESONANCE TOMOGRAPHY AND X-RAY IN DIAGNOSIS OF EARLY RHEUMATOID ARTHRITIS

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Background: For decades, X-ray images have been used to help detect rheumatoid arthritis (RA) and to monitor for the progression of bone damage. In early RA, however, X-rays may appear normal although the