Table 1. Agreement on patient level

	Baseline	Week 6	Delta W6-BL
	ICC (95% CI)	ICC (95% CI)	ICC (95% CI)
Synovitis	0.59 (0.26-0.76)	0.58 (0.24-0.77)	0.18 (0 - 0.40)
Effusion	0.84 (0.66-0.92)	0.84 (0.75-0.89)	0.34 (0.12-0.53)
Osteophytes	0.82 (0.50-0.92)	0.78 (0.56-0.88)	ND
Doppler	0.86 (0.75-0.92)	0.91 (0.85-0.94)	0.80 (0.70 -0.87)

ICC: intra-class correlation coefficient linear mixed model (random patient, fixed rating), absolute agreement. ND: Not Determined

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Figure 1 Ultrasonography synovial thickening score of patients treated with prednisolone versus placebo.

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POS0259

ULTRASOUND AS AN IMAGING BIOMARKER OF EARLY RESPONSE TO TOCILIZUMAB AND METHOTREXATE IN VERY EARLY RHEUMATOID ARTHRITIS, TOVERA – A LONGITUDINAL STUDY

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Background: The combination of methotrexate (MTX) and tocilizumab (TCZ) has been proven to be superior to MTX alone in early rheumatoid arthritis (RA)¹ and was able to prevent radiographic progression. Ultrasound (US) has become a valid imaging modality in managing RA. Together with clinical examination, US may allow a comprehensive monitoring of response to therapy. So far, few data are available concerning the early response to TCZ plus MTX in very early RA (VERA).

Objectives: In this study we aimed to assess the early US response to TCZ plus MTX in VERA, DMARD-nave patients.

Methods: In this open-label, single-arm study, VERA patients received TCZ (162mg/week, subcutaneously) and MTX (15-20mg/week, per os) for 24 weeks as induction therapy, followed by MTX as maintenance therapy. RA was diagnosed according to the 2010 ACR/European league against rheumatism (EULAR) criteria. All patients who fulfilled the inclusion criteria (ClinicalTrials.gov: NCT02837146) underwent blood tests, clinical and ultrasound examinations at the predefined time-points: 0,2,4,8,12,24,32,48,54 weeks (w). Ultrasound examination of 34 joints (elbows, wrists, MCP [1-5, bilateral], PIP [2-5, bilateral], knees, ankles and MTP [2-5, bilateral]) was performed blindly to clinical data. Gray-scale (GS), power-Doppler (PD) scores, and the global OMERACT-EULAR synovitis score (GLOESS) were assessed in each joint. The sum of individual scores was calculated for 17-joint score (JS) (whole joint set), 10-JS (wrists, MCP, ankles and MTP joints), 12-JS², and 7-JS³.

Results: Forty-four patients (77% women), aged 46.7 ± 12.4 years, completed the 24-week period. Two-thirds (72.7%) were positive for anti-citrullinated protein antibody (ACPA) and 18.2% had bone erosions. At baseline, the mean 28 swollen joints count (28-SJC) was 7.55 ± 4.5, mean disease activity score (DAS28)-CRP score was 5.2 ± 0.15, mean simplified clinical activity score (SDAI) was 31.4 ± 1.9, mean clinical activity score (CDAI) was 29.1 ± 1.8 and mean health assessments questionnaire (HAQ) score was 1.3 ± 0.1. The C-reactive protein (CRP) decreased significantly at 2w (p<0.05) and, accordingly DAS28-CRP score decreased significantly at 4w (p<0.05). The 28-SJC and CDAI scores decreased significantly at 8w (p<0.05). The HAQ and visual analogue scale (VAS) disease activity reported by patients decreased significantly at 8w (p<0.05) and VAS fatigue at 12w (p<0.05).

The GLOESS and GS scores allowed us detecting the earliest significant treatment response at 2w and PD scores at 4w (p<0.05). Among US joint subsets, 17-JS (p<0.01), 12-JS (p<0.05) and 10-JS (p<0.05) were able to detect the earliest treatment response at 2w. The 7-joint score detected the earliest response at 4w, both in GS and PD (p<0.05).

Conclusion: US scores were able to detect therapeutic response to TCZ plus MTX earlier than clinical scores and may therefore be a promising imaging biomarker.

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POS0260

ULTRASOUND ASSESSMENT OF HANDS AND FEET FOR SYNOVITIS PRIOR TO FIRST CLINICAL VISIT MARKEDLY REDUCES TIME TO DIAGNOSIS - EXPERIENCE FROM ROUTINE CARE

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Background: All patients referred to our Rheumatology department suspected of having arthritis are scheduled for a visit in the out-patient fast track clinic (FTC) for arthritis. Routine blood samples including C-reactive protein (CRP), anti-CCP, IgM RF, and x-ray of hands and feet are available at the first clinical visit where the medical history and clinical examination is obtained by rheumatologists or rheumatologists-in-training under supervision. The role of ultrasound (US) in routine care for diagnosing arthritis is not fully elucidated but US is more sensitive than clinical joint examination for detecting synovitis. Therefore, US may facilitate diagnosis of arthritis.

Objectives: To assess whether US examinations of hands and feet in relation to the first clinical visit impact the time to diagnosis and number of clinical visits needed.

Methods: From Oct. 2017 to June 2018, US examination of hands and feet (wrist, metacarpophalangeal and proximal interphalangeal joints, ankle, and metatarsophalangeal joints) were performed prior to the first clinical visit by ultrasound-experienced rheumatologists. Using the OMERACT scoring system for grey-scale (GS) and Doppler, synovitis was defined as GS score >1 with or without Doppler score ≥1. Examination time was 20 minutes.

Time from the first clinical visit to the final clinical diagnosis and the number of clinical visits needed in the FTC was assessed and compared to a similar patient cohort the previous year (Nov. 2016 to June 2017) where ultrasound was performed ad hoc. Number of revised diagnoses and the number of patients re-referred after 12 months was noted. Local ethics committee ruled that approval was not needed.

Results: From 2017- 2018, 163 referred patients had US prior to first clinical visit. 76(47%) were diagnosed with inflammatory arthritis (IA), 12(7%) with crystal-related arthritis, 39(24%) with other Rheumatic Diseases (RMDs) and 36(22%) with no RMD diagnosis. The comparative cohort comprised of 109 patients of whom 29(27%) were diagnosed with IA, 16 (15%) with crystal-related arthritis, 31(28%) with other RMDs and 33 (30%) with no RMD diagnosis. Adding US to the first clinical visit reduced the time to diagnosis from mean 31 (standard deviation(SD) ±32.2) days to mean 12 (±17.3) days. The number of clinical visits needed was reduced from mean 2.8(±1.1) to 2.1 (±1.3) corresponding to a reduction of 114 visits in the period from 2017–2018. The mean number of all US examinations in the FTC was 1.1 (±0.3) in the US cohort versus 0.8(±0.7) in the comparative cohort. In the US cohort vs. comparative cohort 8 (4.9%) vs. 17