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OP0284 EVALUATION OF THE IMPACT OF BASELINE LEVELS OF MRI-DETECTED INFLAMMATION ON TREATMENT RESPONSE IN EARLY, SEROPOSITIVE, MTX-NAÏVE RA: DATA FROM THE AVERT TRIAL

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Background: AVERT (Assessing Very Early Rheumatoid arthritis Treatment) was a Phase IIIb, randomized, 24-month (M) trial with a 12M, double-blind treatment period, and included contrast-enhanced MRI of the dominant hand and wrist. MRI can provide direct evidence of joint inflammation, enabling stratification of patient (pt) data according to MRI inflammation level, e.g. low vs high.¹ This stratification is hypothesized to predict clinical treatment response.

Objectives: To evaluate the proportion of pts achieving remission at M12 by baseline (BL) MRI-detected inflammation status and treatment group.

Methods: In AVERT, pts with early RA received abatacept (ABA) + MTX, ABA monotherapy or MTX. MRI inflammation was scored by two central readers at BL and M12. In this *post hoc* analysis, pts were stratified into "low" and "high" BL MRI inflammation groups. Low: ≤ 3 for synovitis, ≤ 3 for osteitis and ≤ 9 when combined (osteitis double weighted);² high: > 3 , > 3 or > 9 , respectively. The proportion of pts achieving CDAI (≤ 2.8), DAS28 (CRP; < 2.6), SDAI (≤ 3.3) and Boolean (TJC ≤ 1 , SJC ≤ 1 , CRP ≤ 1 mg/dL and pt global assessment of disease activity ≤ 1 [0–10 cm scale]) remission at M12 was compared by BL MRI inflammation and treatment group.

Results: Of 351 pts randomized and treated, 337 (96.0%) had MRI data at BL (ABA + MTX, n=114; ABA monotherapy, n=112; MTX, n=111). Mean (SD) BL synovitis, osteitis and total scores, respectively, for pts with low MRI inflammation receiving ABA + MTX vs MTX alone were: 2.6 (2.0) vs 3.1 (2.4), 0.3 (0.6) vs 0.2 (0.5) and 3.1 (2.4) vs 3.5 (2.7); high MRI inflammation: 9.2 (3.6) vs 9.3 (3.6), 10.0 (9.7) vs 10.7 (9.8) and 29.3 (21.3) vs 30.7 (21.3). BL DAS28 (CRP), CDAI and SDAI scores, respectively, for pts with low MRI inflammation receiving ABA + MTX vs MTX alone were: 5.1 (1.1) vs 5.0 (1.3), 34.0 (14.7) vs 32.1 (15.0) and 39.9 (17.4) vs 43.5 (24.6); high MRI inflammation: 6.2 (1.2) vs 5.6 (1.4), 43.4 (16.2) vs 37.7 (18.1) and 76.9 (44.9) vs 61.1 (35.2). The proportion of pts with low BL MRI inflammation attaining remission at M12 was similar regardless of treatment. In pts with high MRI inflammation, remission rates were significantly greater in pts treated with ABA + MTX vs MTX alone (Table).

Table 1. Proportion of Patients in Remission at Month 12 by Treatment and Baseline MRI Inflammation Status*

Remission criteria	Low MRI inflammation		High MRI inflammation	
	ABA+MTX (n=63)	MTX (n=62)	ABA+MTX (n=51)	MTX (n=49)
DAS28 (CRP)	39 (61.9)	31 (50.0)	31 (60.8) [†]	20 (40.8)
CDAI	24 (38.1)	20 (32.3)	24 (47.1) [†]	10 (20.4)
SDAI	25 (39.7)	20 (32.3)	23 (45.1) [†]	8 (16.3)
Boolean	22 (34.9)	18 (29.0)	20 (39.2) [†]	8 (16.3)

Data are n (%); *low: ≤ 3 synovitis, ≤ 3 osteitis and ≤ 9 combined (osteitis double weighted); high: > 3 , > 3 or > 9 ; [†]p<0.05 vs MTX alone.

Conclusions: Pts with higher MRI inflammation may derive greater benefit from abatacept + MTX vs MTX alone. BL MRI inflammation is a predictor of subsequent clinical treatment response to abatacept in RA. MRI may have clinical utility in treatment decisions beyond information obtained from clinical assessments alone.

References:

[1] Gandjbakhch F, et al. J Rheumatol 2014;41:398–406.

[2] Ahmad HA, et al. Ann Rheum Dis 2016;75:624.

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OP0285 ATTENUATION OF FLUORINE-18-FLUORODEOXYGLUCOSE UPTAKE IN LARGE VESSEL GIANT CELL ARTERITIS AFTER SHORT-TERM HIGH-DOSE STEROID TREATMENT – A DIAGNOSTIC WINDOW OF OPPORTUNITY

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Background: Fluorine-18-fluorodeoxyglucose (FDG) PET/CT is increasingly used to diagnose large vessel GCA (LV-GCA) due to its excellent diagnostic accuracy[1]. However, PET/CT is not always readily available, which may compel the clinician to 1) either delay steroid treatment at the risk of GCA related complications, or 2) initiate treatment at the expense of diagnostic sensitivity of the FDG PET/CT study.

Objectives: To evaluate if FDG PET/CT can accurately diagnose LV-GCA after 3 or 10 days of high-dose steroid treatment.

Methods: Twenty-four treatment-naïve patients (16 women) with a mean age of 69 (range 57–84) years with FDG PET/CT (PET0) proven LV-GCA repeated FDG PET/CT after either 3 (PET3, n=10) or 10 days (PET10, n=14) of treatment with oral prednisolone 60 mg daily. Prior to treatment, clinical examination and laboratory tests were performed to confirm GCA and exclude differential diagnoses. A temporal artery biopsy (TAB) was performed in all patients.

Two experienced nuclear medicine physicians blinded to clinical data reviewed the FDG PET/CT images. LV-GCA was suspected if increased FDG uptake in the wall of the aorta and/or supra-aortic branches was observed. A semi-quantitative approach was applied (a.m. Meller) in which FDG uptake was graded on a 5-point scale (0; no uptake, 1; $\leq$ blood pool, 2; $>$ blood pool, $\leq$ liver, 3; $\geq$ liver, 4; ≥ 2 liver). A score ≥ 3 was considered consistent with vasculitis[2]. Vascular composite scores (CS) was calculated summarizing grades from assessed vascular regions; *Aortic:* Aorta ascendens, aorta descendens and aortic arch; *aortic branches:* Vertebral, carotid and subclavian/axillary artery.

Results: Mean CRP and ESR were 72 (95% CI: 55; 94) mg/l and 81 (95% CI: 72; 90) mm/h, respectively. ACR criteria for GCA was fulfilled by 18/24 patients and 17/21 had a positive TAB. Mean number of prednisolone doses before the post-treatment FDG PET/CT were 3.1 (SD 0.3) (PET3) and 10.3 (SD 0.7) (PET10).

Vascular CS in aorta did not decrease at PET3 (9 (IQR 9–9) vs. 9 (IQR 6–9)) whereas a significant decrease was observed in aortic branches at PET3 (6.5 (IQR 6–8) vs 5.5 (IQR 5–7), p<0.01) and both vascular domains at PET10 (Aortic; 9 (IQR 9–9) vs. 5.5 (IQR 3–6), aortic branches; 7 (IQR 7–8) vs 5 (IQR 4–6)). Although, FDG uptake decreased in aortic branches after 3 days, LV-GCA could still be accurately diagnosed in 10/10 patients. By contrast, LV-GCA could only be diagnosed in 5/14 patients after 10 days (PET0 vs. PET10, p<0.01).

At day 10, VAS global was significantly higher in patients with positive PET10 compared to patients with negative PET10 (5.2 (95% CI 3.6; 7.0) vs. 2.7 (95% CI 1.2; 4.2), p<0.05). No clinically significant differences in baseline phenotypical presentation, CRP or PET CS were found between patients with positive and negative PET10, respectively.

Intrater reliability of visual FDG-uptake-grading was substantial (agreement 90%, Cohens weighted kappa 0.67).

Conclusions: In LV-GCA, high-dose steroid treatment for three or ten days differentially attenuates the regional uptake of FDG but diagnostic accuracy remains within the first three days.

References:

[1] Puppo et al. BioMed research international 2014.

[2] Stellingwerff MD et al. Medicine 2015.

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OP0286 THE UTILITY OF THE OMERACT ULTRASOUND TENOSYNOVITIS SCORING SYSTEM IN MULTICENTER CLINICAL TRIALS

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Background: Tenosynovitis is very common in patients with rheumatoid arthritis (RA) and is associated with lower physical function. Several studies have confirmed the limitations of clinical examination for detection of tenosynovitis in comparison with ultrasound (US) and a highly validated and reliable US scoring

system is therefore needed if implementing US-tenosynovitis as an outcome measure in clinical trials. The Outcome Measures in Rheumatology (OMERACT) US group's tenosynovitis scoring system has a good single and multicenter intra- and inter-observer agreement, whereas the sensitivity to change in a multicenter design has never been tested.

Furthermore, it is unknown whether low grade synovial hypertrophy without Doppler Signal represents true inflammation, i.e. can be eliminated by anti-inflammatory therapy and is sensitive to change.

Objectives: The aim of this study was to test the sensitivity to change of the OMERACT US scoring system for tenosynovitis, including minimal signs of tenosynovitis, in a multicenter design in order to validate it as an outcome measure in RA multicenter clinical trials. Furthermore, to assess the association between US and health assessment questionnaire (HAQ) and Disease Activity Score 28 for joints (DAS28).

Methods: Forty-nine patients with established RA (duration ≥ 1 year) and 18 early RA patients (< 1 year) with US-verified tenosynovitis were recruited from six rheumatology outpatient clinics in four different countries, if they were scheduled for treatment intensification with synthetic and/or biological Disease Modifying Anti-Rheumatic Drug. Tenosynovitis was assessed at baseline, and at three and six months' follow-up, by GS and Doppler, using the semi-quantitative OMERACT scoring system. Furthermore, HAQ and DAS28 were assessed.

Results: At baseline tenosynovitis was most frequently found at the extensor carpi ulnaris and tibialis posterior tendons (70.7% and 44.4%, respectively). The overall GS score showed a statistically significant decrease from baseline median 5 (25th/75th percentile: 2;7) to 6 months 0 (0;3) and the overall Doppler score decreased statistically significant from baseline 3 (2;6) to 6 months 0 (0;1), both with a $p < 0.01$. Both GS and Doppler showed high responsiveness (SRM > 0.9), as did HAQ and DAS28 (table 1). Among tendons with grey scale (GS)=1/Doppler=0, 36 of 39 (92.3%) showed therapy-induced improvements. A change of 2.1 (95% confidence interval: 1.2;14.9) and 2.1 (CI: 1.1;13.2) in DAS28 corresponded to a change in GS and Doppler of 1 (both $p=0.02$) respectively, using a mixed-model for repeated measurement. However, no association between US and HAQ was found.

All Sites - Imaging modality	Baseline	0-3 month	p	SRM	0-6 month	p	SRM
Grey scale	Median [25p-75p] Mean $\pm$ SD	4 [2;7] 5.0 $\pm$ 3.4	-2 [-3;-1] -2.4 $\pm$ 2.9	<0.01 0.8	-1.0 [-2.0] 0.9 $\pm$ 2.4	<0.01 0.4	-2 [-3;-1] -2.3 $\pm$ 3.8
Doppler	Median [25p-75p] Mean $\pm$ SD	3 [2;6] 3.2 $\pm$ 0.6	-2 [-4;-1] 0.8 $\pm$ 0.5	<0.01 0.8	0 [-1;0] 0 $\pm$ 0.2	<0.01 0.1	-3 [-5;-1] 0.7 $\pm$ 0.6
DAS28	Median [25p-75p] Mean $\pm$ SD	4.4 [3.7-5.1] 4.4 $\pm$ 1.3	-1.4 [-1.8;-1.0] 1.4 $\pm$ 1.5	<0.01 0.9	0.4 [-1.3;0.1] 0.5 $\pm$ 1.5	<0.01 0.8	-1.6 [-3.2;0.7] -1.8 $\pm$ 1.7
HAQ	Median [25p-75p] Mean $\pm$ SD	1.0 [0.5;1.5] 1.0 $\pm$ 0.8	-0.25 [-0.7;0.2] 0.4 $\pm$ 0.4	<0.01 0.8	0 [0.2;0.8] 0.3 $\pm$ 0.3	0.02 0.1	-0.475 [-0.875;0] 0.5 $\pm$ 0.8

p-value for Wilcoxon's test for change on paired data between 2 time points. N, number of patients; SRM, standardized response mean; DAS28, Disease Activity Score for 28 joints, using a composite of ultrasound findings; HAQ, health assessment questionnaire. Values in brackets are values at 25th and 75th percentiles.

P, p-value for Wilcoxon's test for change of paired data between 2 time points; N, number of patients; SRM, standardized response mean; DAS28, Disease Activity Score for 28 joints, using C-reactive protein; HAQ, health assessment questionnaire. Values in brackets are values at 25th and 75th percentiles

Conclusions: In conclusion, this RA multicenter study documented a high sensitivity to change of both GS and Doppler US tenosynovitis scores, indicating utility of the OMERACT US scoring system for diagnosing and monitoring tenosynovitis in multicenter trials. Secondly, synovial hypertrophy without Doppler signal, do respond to therapy, suggesting it reflects true inflammation. Finally, changes in US tenosynovitis scores are associated with changes in DAS28.

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OP0287 ULTRASONOGRAPHY-DETECTED PERIPHERAL ENTHESITIS IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS – ANATOMICAL DISTRIBUTION, MORPHOLOGY AND RESPONSE TO ANTI-TNF THERAPY

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Background: Peripheral enthesitis (PE) is a characteristic feature of spondyloarthritis (SpA) that may be asymptomatic and only detectable by imaging. Ultrasonography (US) has greater sensitivity than clinical examination for the detection of PE.[1]

Objectives: The aim of the study was to investigate the anatomical distribution, morphological abnormalities and response to anti-tumor necrosis factor (anti-TNF) therapy of US-detected PE in patients with axial SpA (axSpA) initiating adalimumab (ADA).

Methods: In a randomized, placebo-controlled, double-blinded investigator-initiated trial (NCT01029847), patients with axSpA according to the Assessment of SpA International Society (ASAS) criteria were randomized to subcutaneous ADA 40 mg every other week (eow) or placebo from baseline to week 6. From week 6 to 24, all patients received ADA 40 mg eow. Of 49 patients enrolled, 21 participated in the US sub-study. US assessment applying the OMERACT US definitions for enthesitis[2] of 10 peripheral enthesal regions (Tables 1 & 2) and clinical examination were performed at baseline, weeks 6 and 24. US was performed by an experienced investigator. Hypo-echogenicity, increased thickness and Doppler activity of the enthesis were considered signs of active inflammation, whereas insertional bone erosions, intratendinous calcifications and enthesophytes were regarded as signs of chronic lesions.[2]

Results: See tables.

Conclusions: In this axSpA cohort, US assessment primarily identified PE in the

Table 1. Distribution of US findings at baseline (n=21)

Enthesal regions	Enthesitis* N (%)	Chronic lesions N (%)	Inflammation N (%)
Supraspinatus tendon	6 (29)	6 (29)	0
Triceps tendon	2 (10)	1 (5)	1 (5)
Common extensor, elbow	5 (24)	5 (24)	1 (5)
Common flexor, elbow	0	0	0
Greater femoral trochanter	11 (52)	11 (52)	0
Quadriceps tendon	13 (62)	13 (62)	3 (14)
Proximal insertion of the patellar tendon	3 (14)	2 (10)	1 (5)
Distal insertion of the patellar tendon	3 (14)	2 (10)	2 (10)
Achilles tendon	17 (81)	16 (76)	4 (19)
Plantar fascia	4 (19)	0	4 (19)

*inflammation and/or chronic lesions.

Table 2: US and clinical findings during study period

	Week 0 (N=10)	Week 6 (N=9)	Week 24 (N=10)	Week 0 (N=11)	Week 6 (N=11)	Week 24 (N=10)
US findings						
Supraspinatus tendon	3 (30)	2 (22)	1 (10)	3 (27)	2 (18)	1 (10)
Triceps tendon, elbow	1 (10)	0	1 (10)	1 (9)	0	2 (20)
Common extensor, elbow	0	0	0	5 (46)*	0	1 (10)*
Common flexor, elbow	0	0	0	0	0	0
Greater femoral trochanter	6 (60)	6 (67)	6 (60)	5 (46)	6 (55)	6 (60)
Quadriceps tendon	4 (40)	1 (11)	4 (40)	9 (82)	8 (73)	6 (60)
Proximal patellar tendon	1 (10)	0	0	2 (18)	1 (9)	1 (10)
Distal patellar tendon	2 (20)	1 (11)	1 (10)	1 (9)	1 (9)	0
Achilles tendon	7 (70)	7 (78)	8 (80)	10 (91)	7 (64)	7 (70)
Plantar fascia	1 (10)	0	0	3 (27)	3 (27)	2 (20)
Clinical findings						
MASES	4.6 (4.0)	4.0 (3.3)	2.2 (3.7)	3.0 (3.7)	2.1 (2.5)	2.0 (3.0)
LEI	0.7 (0.9)	0.9 (1.0)	0.6 (0.9)	1.1 (1.1)	0.7 (0.9)	0.3 (0.7)
SPARCC Enthesitis Index	3.2 (3.8)	3.6 (2.6)	2.2 (2.8)	2.6 (2.9)	1.6 (1.9)†	0.8 (1.1)†
BASDAI	7.0 (1.9)	6.4 (2.5)	4.3 (2.7)†	6.3 (1.3)*	4.2 (2.3)†	2.9 (2.5)†

N (%), Mean (SD) for LEI, SPARCC and BASDAI. Wilcoxon Rank test was applied. $P < 0.05$ is considered significant.
* $P < 0.05$ week 0-6; † $P < 0.05$ week 6-24; ‡ $P < 0.05$ week 0-24.
MASES, Maastricht Ankylosing Spondylitis Enthesitis Score; LEI, Leeds Enthesitis Index; SPARCC, Spondyloarthritis Research Consortium of Canada; BASDAI, Bath Ankylosing Spondylitis Disease Activity Index.

lower extremities, and predominantly chronic lesions. No change in chronic PE lesions were found during treatment indicating a low sensitivity to change of these lesions. The number of entheses with inflammatory activity was too low to detect any changes on US during ADA therapy.

References:

[1] D'Agostino MA, et al. Ann Rheum Dis 2011, 70(8):1433–1440.

[2] Terslev L, et al. Arthritis Care Res (Hoboken) 2014, 66(5):741–748.

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OP0288 RELIABILITY OF A EULAR-OMERACT SEMIQUANTITATIVE SCORING SYSTEM FOR THE ASSESSMENT OF CARTILAGE IN RHEUMATOID ARTHRITIS

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Background: Joint destruction in rheumatoid arthritis (RA) is comprised of hyaline cartilage and bone damage, with the former more clearly associated with irreversible physical disability than bony damage.

Objectives: To test the reliability of a semiquantitative scoring system for the assessment of cartilage by musculoskeletal ultrasound (US) in a web-based exercise as well as a patient-based reliability study of patients with RA.

Methods: Static images of metacarpophalangeal (MCP) joints 2–5 in RA patients and healthy controls were acquired and a dataset of 123 anonymized images including 25 duplicate images was circulated among an international EULAR-OMERACT taskforce of 25 rheumatologist experts in US who independently scored the images using a semiquantitative scoring system. Subsequently 12 taskforce members participated in a patient-based reliability study. During this