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Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.5168

THU0535

ARE THERE DISCRIMINATING FEATURES BETWEEN "SCLERODERMA" AND "SCLERODERMA-LIKE" CAPILLAROSCOPIC PATTERN?

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Background: The "scleroderma" type capillaroscopic pattern is a diagnostic criterion of the EULAR/ACR scoring system for systemic sclerosis (SSc). In addition, the validated staging system of Cutolo et al. is used that categorizes the capillaroscopic changes into an "early", "active" and "late" phase. A "scleroderma-like" capillaroscopic pattern can also be observed in a number of rheumatic diseases, i.e., dermatomyositis (DM), systemic lupus erythematosus (SLE), undifferentiated connective tissue diseases, overlap syndromes, and rheumatoid arthritis (RA).

Objectives: To evaluate the categories "early", "active" and "late" in "scleroderma-like" pattern in rheumatic diseases different from SSc and to assess the presence of discriminating features between "scleroderma" and "scleroderma-like" capillaroscopic pattern.

Methods: 544 capillaroscopic images that showed a "scleroderma" and "scleroderma-like" pattern have been analysed from the following groups: 405 images from 42 SSc patients, 66 images from 4 patients with DM, 37 images from 9 RA patients and 36 images from 5 SLE patients.

Results: 30 of the images obtained from SSc patients demonstrated an "early" phase capillaroscopic pattern, 284 an "active" phase, and 29 a "late" phase. In 62 images, neoangiogenesis could be observed in images from an "active" phase capillaroscopic pattern that could be classified as "active-to late stage of transition." Among the 66 images from DM patients, 43 capillaroscopic pictures revealed an "active" phase and 23 - neoangiogenic capillaries with giant capillary loops, capillary loss and derangement ("active neoangiogenic" pattern). An "early" and "late" phase capillaroscopic pattern was not present in this group. The images from SLE patients (n=36) could be classified into the following groups: 3 images "early" phase, 29 images "active" phase, and 4 images with neoangiogenesis during the active phase. A "late" phase capillaroscopic pattern was not observed. In the group of capillaroscopic pictures from RA patients (n=37), an "early" phase changes could be observed in 11 images (8 out of 9 patients) and an "active" phase in 3 images (2 patients). 23 of the images from RA patients demonstrated evidence of neoangiogenesis associated with mild capillary derangement, moderate capillary loss, and single giant capillaries ("advanced neoangiogenic" pattern).

Conclusion: In conclusion, an "early" phase "scleroderma" pattern is present in RA and SLE patients, but obviously not in DM patients. An "active" phase "scleroderma" pattern was found in all three patients groups other than SSc i.e., DM, SLE and RA. In DM, profound neoangiogenesis is also a characteristic finding. In RA, advanced neoangiogenesis with moderate devascularization and single giant capillaries could also be documented. A classic "late" phase "scleroderma" pattern was found only in SSc patients and was not observed in other rheumatic diseases i.e., SLE, RA, DM. The results of the current study suggest presence of differences between "scleroderma" and "scleroderma-like" capillaroscopic pattern that may reflect different pathogenic mechanisms of microvascular damage.

Disclosure of Interests: Sevdalina Lambova: None declared, Ulf Müller-Ladner Speakers bureau: Biogen

DOI: 10.1136/annrheumdis-2020-eular.2233

THU0536

ASSOCIATION BETWEEN OVERWEIGHT/OBESITY AND DISEASE ACTIVITY ON BONE SCINTIGRAPHY IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: In previous studies, obesity is highly prevalent in patients diagnosed with rheumatoid arthritis and it is positively associated with disease

activity¹. Although Tc-99m-labeled bone scintigraphy has been widely performed to evaluate the disease activity of the joints involved in this disease²; the effect of body mass index (BMI) on the results of bone scintigraphy is yet to be accessed.

Objectives: In the present study, we evaluated the relationship between BMI and uptake intensity of the joints that was measured using bone scintigraphy in patients with rheumatoid arthritis.

Methods: A total of 80 patients (21 men and 59 women; mean age 56±14 years) with rheumatoid arthritis who underwent Tc-99m methylene diphosphonate bone scintigraphy before treatment were enrolled in this study. Data were collected for baseline BMI and disease activity score for the 28 joints using erythrocyte sedimentation rate (DAS28-ESR) of these patients. Uptake intensity of these 28 joints was automatically measured for each patient using an in-house software, expressed as joint uptake-to-background normal bone uptake ratio (joint uptake ratio). The correlation of BMI with DAS28-ESR and joint uptake ratio on bone scintigraphy was assessed.

Results: Mean BMI of the enrolled patients was 24.4±3.7 kg/m² and 50 patients (62.5%) were classified as overweight/obesity. BMI was significantly positively correlated with the sum of 28 joint uptake ratios on bone scintigraphy (p=0.021, correlation coefficient=0.358) as well as DAS28-ESR (p=0.030). Patients with overweight/obesity (39.2±9.5) had significantly higher values of the sum of 28 joint uptake ratios than the other patients (33.9±9.5; p=0.025). In correlation analysis with each joint uptake ratio of 28 joints, BMI more significantly positively correlated with uptake ratios of shoulder, elbow, and knee joints than those in wrist and hand joints. In subgroup analysis of patients having low (DAS28-ESR ≤3.2) and high (DAS28-ESR >3.2) disease activity, BMI still showed significant positive correlation with the sum of 28 joint uptake ratio on bone scintigraphy in both subgroups (p<0.05 for all).

Conclusion: The Baseline BMI in patients with rheumatoid arthritis had significant positive correlation with joint uptake intensity measured on bone scintigraphy, especially for large joints. The results of our study might provide an evidence that supports an association between BMI and disease activity of rheumatoid arthritis.

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Acknowledgments: Research relating to this abstract was funded by the National Research Foundation of Korea (NRF) grant funded by the Korea government (Ministry of Science and ICT) (grant number: NRF-2018R1C1B5040061).

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.631

THU0537

VALIDITY AND DIAGNOSTIC PERFORMANCE OF FLUORESCENCE OPTICAL IMAGING MEASURING SYNOVITIS IN HAND OSTEOARTHRITIS. RESULTS FROM THE NOR-HAND STUDY.

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Background: Fluorescence Optical Imaging (FOI) demonstrates enhanced microcirculation in finger joints as a sign of inflammation.

Objectives: We wanted to assess the validity and diagnostic performance of FOI measuring synovitis, comparing it with Magnetic Resonance Imaging (MRI)- and ultrasound-detected synovitis in persons with hand osteoarthritis (OA).

Methods: Two hundred and twenty-one participants (88% female, age (SD) 60.6 (6.2) years) with hand OA from the Nor-Hand study underwent FOI and grey scale (GS) and power Doppler (PD) ultrasound of the bilateral hands and contrast-enhanced MRI of the dominant hand. The FOI scan was performed after the administration of an intravenous fluorescence dye (indocyanine green, ICG) and 360 images (1/second) were produced in 6 minutes. One reader scored the bilateral distal interphalangeal (DIP), proximal interphalangeal (PIP), metacarpophalangeal (MCP) and first carpometacarpal (CMC-1) joints for FOI enhancement, blinded for clinical information and other imaging data. Images were scored according to the 'FOI activity score' (FOIAS) where four out of 360 images are assessed, defined as phase 1, 2, and 3, based on the inflow and washing out of the fluorescence dye, and a composite image (Prima Vista Mode; PVM) of the 240 first images. Two readers evaluated separately the severity of