PROGNOSTIC VALUE OF 18F-FLUORODEOXYGLUCOSE PET-CT SCORE AT BASELINE ON THE THERAPEUTIC RESPONSE TO PREDNISONE IN PATIENTS WITH POLYMALGIA RHEUMATICA

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Background: Polymyalgia rheumatica (PMR) is one of the most common inflammatory rheumatic diseases. To date, there is no imaging procedure that can be used as a prognostic factor for good or poor response to corticosteroid therapy

Objectives: To evaluate the prognostic value of 18F-fluorodeoxyglucose PET-CT (FDG-PET/CT) score at baseline, on the therapeutic response to prednisone, in patients with polymyalgia rheumatica (PMR).

Methods: This is a monocentric retrospective study realized at the university hospital of Besançon. We included patients with a diagnosis of PMR meeting the 2012 ACR/EULAR criteria, who had performed a FDG-PET/CT at baseline, between December 2012 and December 2017. Patients were treated with an initial prednisone dose of 0.3 mg/kg a day, progressively decreased following a standardized tapering dose protocol (10%/month). We excluded patients who received corticosteroids before the FDG-PET/CT, or without baseline FDG-PET/CT. Seventeen specifics previously described hotspots were visually analyzed (1). We realized a semi-quantitative analysis of FDG uptake (4-point score from 0 to 3), following Goerres scoring system (2). Hotspot with 0 indicating no uptake (same quantitative analysis of FDG uptake) and 18/51. The FDG-PET/CT score at baseline was significantly lower in the group with higher systemic inflammation twice during the prednisone tapering. Results: 33 patients where included: 14 (42%) in the group with a baseline CRP at 45.02 ± 39.59 mg/l. The mean FDG-PET/CT score at baseline was 18/51. The FDG-PET/CT score at baseline was significantly lower in the group with higher systemic inflammation twice during the prednisone tapering (13.1 ± 22.8/51, p = 0.01), and mostly men (66.5% vs 22%, p = 0.02). ROC curve showed a threshold of 9.5/51 with a specificity of 61.54% and a sensitivity of 84.21% (AUC 0.76 +/- 0.089, p = 0.014). There was no statistically significant difference concerning CRP at baseline (48.6 mg/l vs 44.8 mg/l; p = 0.58), and no correlation between CRP and PET/CT score (r = -0.25, p = 0.15). The prevalence of synovitis (21% vs 57%, p = 0.46), and neoplasia (0% vs 15.79%, p = 0.79) were similar across the two groups. Conclusion: Our results suggest that in patients with PMR, a baseline FDG-PET/CT score over 9.5/51 score is predictive of a good response to prednisone.

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AB1143

SUBCLINICAL MICROVASCULAR INVOLVEMENT IN SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS

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Background: Peripheral microcirculation is well studied in primary Raynaud’s phenomenon (RP), but poorly investigated in systemic lupus erythematosus (SLE) (1-3).

Objectives: To investigate morphological and functional aspects of microcirculation in different skin areas of the hands in SLE patients in comparison with primary RP (RPp) patients and healthy subjects (CNT).

Methods: 15 SLE patients without RP (ACR 2013 criteria) (mean age 52 ± 13 SD years, mean disease duration 6±3 years), 15 RPp patients (LeRoy 2001 criteria) (mean age 52±16 years, mean RP duration 6±4 years) and 15 sex-matched controls (CNT) (mean age 51±16 years) were enrolled during the winter period. Nailfold videocapillaroscopy (NVC) and laser speckle contrast analysis (LASC A) have been performed in the three groups of patients. The absolute nailfold capillary number (CN) per linear millimeter at first distal row was assessed by NVC (4). Blood perfusion (BP) was detected by LASC A at the level of fingertips, periungual areas, dorsum and palm of both hands (2). Patients were not taking vasoactive drugs since at least one month before study entry. Statistical analysis was performed by non-parametric tests.

Results: SLE patients showed a statistically significant lower nailfold absolute CN than both RPp and CNT (median 9.2 vs 10.2 vs 11.1, respectively, p<0.0006). Conversely, no statistically significant difference of nailfold CN was observed between RPp and CNT. RPp patients showed a statistically significant lower BP than SLE and CNT, and SLE than RPp, at the level of fingertips (median 90, 113, 186 PU, respectively; p<0.0001), periungual (median 75, 100, 142 PU, respectively; p<0.0001), dorsal (median 63, 73, 126 PU, respectively, p<0.0001), and palm areas (median 76, 95, 124 PU, respectively, p<0.0001). A positive correlation between nailfold CN and BP was observed in all areas of hands in SLE patients (p<0.0001). On the contrary, no statistically significant correlation was observed in both RPp and CNT, between nailfold CN and BP in all examined areas (p=0.74 and p=0.23, respectively).

Conclusion: SLE patients, without RP, show a subclinical microvascular impairment, having lower nailfold CN and lower BP than CNT. Conversely, RPp patients show only a functional dysfunction, having lower peripheral skin BP than both SLE patients and CNT. A correlation between morphological and functional microvascular features was also found in SLE patients. These findings seem to suggest interesting microvascular insights in active SLE patients.

DISCLOSURE OF INTERESTS: None declared


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ULTRA HIGH FIELD MRI MICROARCHITECTURE ANALYSIS IMPROVES THE PREDICTION OF PROXIMAL FEMUR FRACTURE: A COMBINED STUDY WITH EX VIVO BIOMECHANICAL TESTING

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Background: The whole set of specimens underwent mechanical compression tests to investigate morphological and functional aspects of microcirculation in different skin areas of the hands in SLE patients in comparison with primary RP (RPp) patients and healthy subjects (CNT). Bone strength using biomechanical tests and bone mineral density (BMD) using Dual-energy X-ray absorptiometry (DXA).

Objectives: We aimed at determining whether bone microarchitecture parameters were related to bone strength and BMD and whether UHF MRI can provide additional information regarding bone strength.

Methods: BMD of ten proximal femurs from five cadavers were investigated using DXA and the bone volume fraction (BV/FV), trabecular thickness (Tb.Th), and trabecular spacing (Tb.Sp), fractal dimension (FD), Euler characteristics (Euler Ch.), Connectivity density (Conn. D) and Degree of anisotropy (DR of each femur was quantified using UHF MRI). The whole set of specimens underwent mechanical compression tests to failure.

Results: BMD and all the microarchitecture parameters except ConnD were significantly correlated with failure load (p < 0.05). The