PROGNOSTIC VALUE OF 18F-FURODEOXYGLUCOSE 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 Goeres scoring system (2). Hotspot with 0 indicating no uptake (same as bone); 1: slight uptake; 2: moderate uptake (same as liver); and 3: uptake higher than the liver, with a global range score of 0 to 51. Then we defined two groups of patients according to their resistance to prednisone at 12 months, defined as the reoccurrence of symptoms and/or an increase of systemic inflammation twice during the prednisone tapering.

Results: 33 patients were included. 14 (42%) in the group “resistant” and 19 (58%) in the group “sensitive”. There were 57.6% of women, with a mean age of 67.57 ± 11.63 years. The mean CRP at baseline was 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 resistant group (13.1 vs 22.8/51, p = 0.019). Resistant 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).

Discriminant analysis revealed that the FDG-PET/CT score over 9.5/51 score is predictive of a good response to prednisone. There were 57.6% of women, with a mean age of 67.57 ± 11.63 years. The mean CRP at baseline was 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 resistant group (13.1 vs 22.8/51, p = 0.019). Resistant 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).

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.

REFERENCES

Disclosure of Interests: None declared

AB1143
SUBCLINICAL MICROVASCULAR INVOLVEMENT IN SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS

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Method: 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 Goeres scoring system (2). Hotspot with 0 indicating no uptake (same as bone); 1: slight uptake; 2: moderate uptake (same as liver); and 3: uptake higher than the liver, with a global range score of 0 to 51. Then we defined two groups of patients according to their resistance to prednisone at 12 months, defined as the reoccurrence of symptoms and/or an increase of systemic inflammation twice during the prednisone tapering.

Results: 33 patients were included. 14 (42%) in the group “resistant” and 19 (58%) in the group “sensitive”. There were 57.6% of women, with a mean age of 67.57 ± 11.63 years. The mean CRP at baseline was 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 resistant group (13.1 vs 22.8/51, p = 0.019). Resistant 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).

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.

REFERENCES

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 purpose of this study was to assess cadaveric proximal femurs from the points of view of bone microarchitecture using ultra-high field (UHF) 7 Tesla magnetic resonance imaging (MRI), 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 (DA) of each femur were 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