Background: Acromegaly is a rare disease with a remarkable impact on patients, both in terms of life expectancy and quality of life. Osteo-articular complications are one of the most frequently reported bothers. The “acromegaly artropathy” characterizes more than 70% of patients at diagnosis. Artropathy affects both spine and peripheral joints. A recent prospective study documented progression of acromegalic artropathy identified as a worsening of osteophytes and joint space narrowing in 72–74% of patients despite long-term biochemical control. In addiction the Literature has occasionally reported cases of simultaneous presence of rheumatic diseases (rheumatoid arthritis, polymyalgia rheumatica, undifferentiated connective tissue diseases) and acromegaly and in all these cases the treatment has been delayed, because of wrong symptoms attribution to acromegaly artropathy.

Objectives: The primary goal of the study is to better characterize joint pain in acromegaly patients and to evaluate the prevalence of rheumatic disease in growth hormone (GH) secreting pituitary tumor patients.

Methods: We enrolled 20 acromegaly subjects (AS) and 20 control subjects (CS). In each subject immunological pattern (rheumatoid factor – RF; antinuclear antibodies - ANA, ENA; anti-citrullinated protein antibodies - ACPA; erythrocyte sedimentation rate – ESR) has been evaluated; they, also, underwent bilateral joint ultrasound of hands and wrists and nail capillaroscopy. The Chi square test and the Fisher’s exact test were used to evaluate the association between binary variables, while the Spearman’s test to evaluate the correlation of continuous ones. A multiple or logistic regression model was calculated in order to define the association between the capillaroscopic alterations and other detected variables.

Results: Articular pain emerged as significantly more frequent in AS (p = 0.0269). No statistically significant differences are detected regarding immunological pattern. ANA and ENA screening resulted positive in 10% in AS and in 5% in CS. No IgA ACPA were detected in AS or CS, while IgG ACPA were positive only in one AS subject. No significant differences were detected between IgM and IgG RF in the two groups (AS 5% and CS 0%). Three fold higher IgG FR in AS compared to CS were detected. ESR levels were significantly higher than CS (p = 0.0045), as well as increased power doppler (PWD) articular uptake (AS 30% vs CS 5% p = 0.081). The capillaroscopic evaluation showed a significant difference in almost each parameter that has been evaluated (logistic regression: number of enlargement p = 0.004, hemorrhages p = 0.01 and capillaries p = 0.001), showing a moderate-severe microangiopathy in AS. Interestingly, we identify a significant lower number of hemorrhages (p = 0.02) in patients treated with GH antagonist pegvisomant.

Conclusion: Our results demonstrated that joint damage in acromegaly does not seem to have an autoimmune etiology. Therefore, articular damage is mechanical and increased ESR and PWD alterations seems to confirm the presence of an inflammatory component. In addition, acromegaly is characterized by a microvascular pattern of moderate-severe microangiopathy, without correlation to IGF-I, but GH levels. Although requiring further confirmatory studies, our preliminary results seem to indicate how the capillaroscopic examination could be useful to detect earlier microangiopathy and to identify patients with a greater risk of macroangiopathy development.

References:

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