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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 arthropathy” characterizes more than 70% of patients at diagnosis. Arthropathy affects both spine and peripheral joints. A recent prospective study documented progression of acromegalic arthropathy identified as a worsening of osteophytes and joint space narrowing in 72–74% of patients despite long-term biochemical control. In addition 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 arthropathy.

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 between continuous 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 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, analyzing only the acromegaly cohort, we noticed higher GH levels at the enrollment p 0.001, showing a moderate-severe microangiopathy in AS. Interestingly, analyzing only the acromegaly cohort, we noticed higher GH levels at the enrollment p 0.001, showing a moderate-severe microangiopathy in AS.

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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