



SEARCHING THE CALCINOSIS SIGNATURE: A CASE CONTROL STUDY ANALYZING LIMITED SYSTEMIC SCLEROSIS FEMALE PATIENTS WITH AND WITHOUT CALCINOSIS, PAIRED BY DISEASE DURATION, AGE AND BODY MASS INDEX

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BACKGROUND

Calcinosis usually represents a late manifestation of limited systemic sclerosis (ISSc), inducing chronic calcifications that lead to significant impairment in the quality of life. As an effective treatment for calcinosis in SSc is an unmet need in clinical practice, the identification of risk factors associated with its presence is rather important for the development of therapeutic strategies.

Purpose. The aim of this study was to compare and analyze clinical aspects and laboratory parameters, including bone metabolism, in female ISSc patients with and without calcinosis, paired by disease duration, age and body mass index (BMI).

MATERIALS AND METHODS

Thirty-six female ISSc patients with calcinosis were compared to 36 female ISSc patients without calcinosis, matched by disease duration, age and BMI. Modified Rodnan skin score (mRSS) was used to determine the extension of the skin involvement. Organ involvement, autoantibodies, bone mineral density (BMD) by DXA and laboratory parameters were analyzed. The past and current treatment modalities were also questioned. Statistical significance was considered if $p < 0.05$.

RESULTS

Esophageal hypomotility, digital ulcers and interstitial lung disease were the most frequent clinical manifestations of ISSc patients, present in similar frequency in both groups. In univariate analysis, calcinosis was significantly associated with acroosteolysis (69% vs. 22%, $p < 0.001$), higher modified mRSS (4.28 ± 4.66 vs 1.17 ± 2.50 , $p < 0.001$), higher 25OH vitamin D (24.46 ± 8.15 vs. 20.80 ± 6.60 ng/ml, $p = 0.040$) and phosphorus serum levels (3.81 ± 0.41 vs. 3.43 ± 0.45 mg/dl; $p < 0.001$). Antinuclear antibodies (ANA) was positive in 89% in both groups. Anticentromere antibody was frequent (44% and 31%), while positive anti-Scl70 was rare in both groups. Regarding treatment, current use of glucocorticoid was lower in patients with calcinosis compared to patients without calcinosis (8% vs. 28%; $p = 0.032$). Osteoporosis was more frequent in the group with calcinosis (31% vs. 17%), although not statistically significant. Logistic regression analysis showed that acroosteolysis (OR=12.04; 95% CI:2.73-53.04; $p = 0.001$), mRSS (OR=1.37; 95% CI:1.11-1.69; $p = 0.003$), phosphorus serum levels (OR=5.07; 95% CI:1.06-24.23; $p = 0.042$), and lower glucocorticoid use (OR=0.07; 95% CI:0.007-0.66; $p = 0.021$) were independently associated with calcinosis.

CONCLUSION

This study showed that ISSc patients with calcinosis present a distinct clinic and biochemical profile, characterized by acroosteolysis, higher mRSS score, higher serum levels of phosphorus and lower glucocorticoid use.