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INTERLEUKIN-18-BINDING PROTEIN ISOFORM A (IL-18 BPA): SERUM LEVELS AND CLINICAL ASSOCIATIONS IN SYSTEMIC SCLEROSIS PATIENTS

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BACKGROUND

Systemic sclerosis (SSc) is an autoimmune disease characterized by progressive fibrosis of the skin and internal organs, vascular changes and immunological dysregulation. The involvement of IL-18 and its signaling in the pathogenesis of SSc is not clear and the studies conducted have conflicting results. IL-18 signaling is controlled by the balance between IL-18 and IL-18 binding protein isoform a (IL-18 BPa), a receptor that acts as an inhibitor of IL-18 signaling. This study aimed to evaluate the serum levels of IL-18 BPa in SSc patients and the possible associations with the clinical manifestations of the disease.

MATERIALS AND METHODS

Sixty-one SSc patients (mean age 48.3 + 12.9) and sixty-one healthy volunteers (mean age 44.7 + 11.7) were enrolled in the study. All patients fulfilled the 1980 ACR or 2013 ACR/EULAR criteria. Clinical and laboratory parameters were recorded down from the medical charts. Serum levels of IL-18 BPa were quantified by ELISA (R&D).

RESULTS

Serum levels of IL-18 BPa are significantly decreased in SSc patients compared to healthy subjects (median 10.846 pg/ml and 16.800 pg/ml, respectively) ($p<0.0001$). In the evaluation of the possible correlations and associations of serum levels of IL-18 BPa with the clinical parameters of the disease, it was possible to observe that serum levels of IL-18 BPa were significantly lower in patients with Raynaud's phenomenon (median 10.646 pg/ml, $p= 0.019$), digital ulcers (9.846 pg/ml, $p= 0.036$) and arthritis (median 9.471, $p= 0.039$), when compared with patients without these manifestations (medians: 15.621, 12.771 and 11.358 pg/ml, respectively). Additionally, it was observed that patients with myopathy had higher IL-18 BPa levels when compared to those without this condition (medians: 14.050 and 10.346 pg/ml, $p= 0.006$). No other clinical associations were observed.

CONCLUSION

These findings show a significant reduction in serum levels of IL-18 BPa in patients with systemic sclerosis when compared with healthy individuals and suggest this cytokine as a possible biomarker of vascular and musculoskeletal manifestations of the disease. Further studies are needed to address the role of IL-18 BPa in the pathogenesis of SSc.