Serum calprotectin as a biomarker of disease activity in Behçet's disease

K.S. Nurbaeva [1], T.M. Reshetnyak [1,2], M.V. Cherkasova [1], R.G. Goloeva[1], T.A. Lisitsyna [1], A.M. Lila[1,2]

[1] V.A.Nasonova Research Institute of Rheumatology, Moscow, Russian Federation
[2] Federal State Budgetary Educational Institution of Further Professional Education "Russian Medical Academy of Continuous Professional Education" of the Ministry of Healthcare of Russian Federation, Moscow, Russian Federation

Background: Behçet's disease (BD) is a systemic neutrophilic vasculitis characterized by recurrent oral ulcers, genital ulcers, and internal organ damage. Calprotectin (CLP) is a marker of neutrophil activation and NETosis. Currently, there is insufficient data on the role of serum CLP in determining the activity of BD.

Aim: To measure the levels of serum calprotectin in BD patients and to assess its association with disease activity.

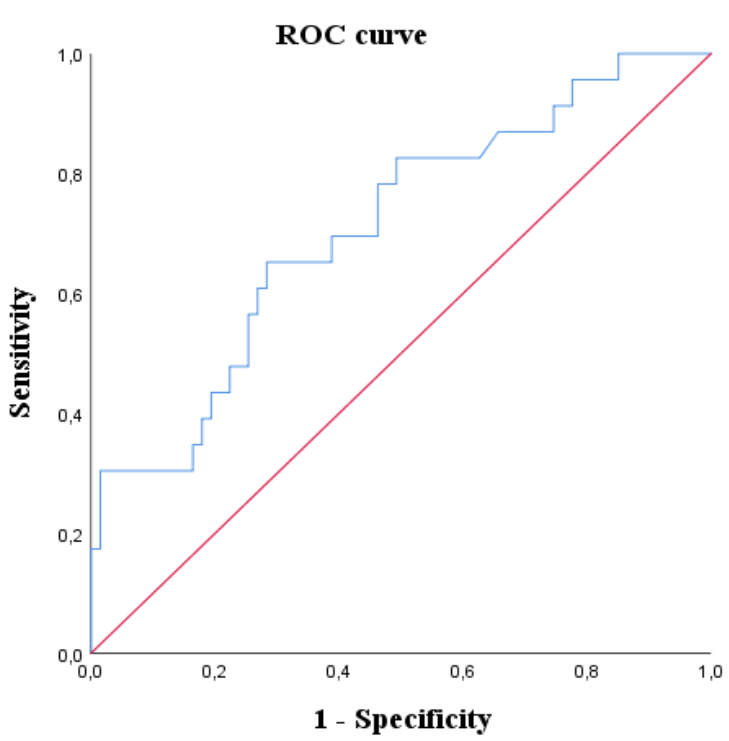
Material and methods.

This study included 90 BD patients and 30 healthy controls. The median age of patients was 32 years [26; 37], the median disease duration was 11 years [5; 15]. The activity of BD was determined using the Behçet's disease current activity Form (BDCAF). High and low disease activity were defined as BDCAF score ≥4 or <4, respectively. CLP was measured in serum by enzyme-linked immunosorbent assay according to the manufacturer's protocol (Bulhmann Laboratories AG, Switzerland).

Results.

Serum CLP levels were higher in patients with BD compared to healthy controls (4.08 [2.81; 7.25] μg/mL vs. 2.86 [2.15; 3.92] μg/mL, p = 0.003). The concentration of CLP was higher in patients with high disease activity than in patients with low disease activity (6.47 [3.9; 11.68] μg/mL vs. 3.16 [2.69; 6.44] μg/mL, p = 0.003). A direct correlation was found between calprotectin and the BDCAF index (r_s =0.415, p<0.0001). The sensitivity and specificity of CLP for differentiating BD patients with high disease activity from low activity patients using a cutoff value of 3.85 μg/mL were 78.3% and 53.7%, respectively. The area under the ROC curve of CLP was 0,709, 95%% CI: 0.586-0.833, p = 0.003 (Fig. 1).

Fig.1. ROC curve of CLP for determining the high disease activity of BD



Conclusion: The serum CLP levels were significantly higher in BD patients compared to controls. High levels of CLP were associated with high disease activity with 78.3% sensitivity and 53.7% specificity.

Conflict of interest: the Authors declare that there is no conflict of interest