Research no7

Expression of lncRNAs NEAT1 and lnc-DC in serum from patients with Behçet's Disease can be used as predictors of disease

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Abstract

Behçet's disease (BD) is a chronic autoimmune disease. The early diagnosis of BD is very important to avoid serious and/or fatal complications such as eye damage, severe neurological involvement, and large vessel occlusion. New, sensitive biomarkers would aid in rapid diagnosis, the monitoring of disease activity, and the response to treatment.

Methods:This study's aim is to identify two immune system-related BD biomarkers. We measured long non-coding RNAs (lncRNAs)NEAT1(nuclear-enriched abundant transcript and lnc-DC (lncRNA in dendritic cells) in serum by real-time polymerase chain reaction) (RT-PCR) in 52 BD patients and 52 controls. We analyzed the association betweenNEAT1 and lnc-DC and the clinical parameters of BD. Receiver operating characteristic (ROC)curve analysis was performed to explore the diagnostic performance of the studied genes.

Results: Compared to controls, the significant upregulation of NEAT1 (median interquartile range) (IQR)] 1.68 (7.7-0.38)),p<0.0001} and downregulation of lnc-DC[median (IQR=0.2 (0.12-1.39),p=0.03)were detected in the sera collected from BD patients. Higher serum expression levels of NEAT1and lnc-DC were significantly associated with the following clinical presentations: cutaneous lesions, vascular manifestations, articular manifestations, neurological manifestations, and higher disease activity score. Also, highNEAT1levels were significantly associated with a negative pathergy test, while higherlnc-DC was significantly associated with a positive family history. ROC curves showed thatNEAT1andlnc-DC levels in serum could be used as predictors of BD with high specificity and fair sensitivity.NEAT1had an area under the curve (AUC) of 0.692 (95% CI: 0.591–0.794 ,p =0.001)and lnc-DC had an AUC of 0.615 CI: 0.508–0.723,p0.043)

Conclusion: Serum lncRNAsNEAT1and lnc-DC are biomarkers for BD.