

# **Association of long non-coding RNAs NEAT1, and MALAT1 expression and pathogenesis of Behçet's disease among Egyptian patients**

## **a b s t r a c t**

Behçet's disease (BD) is a chronic inflammatory disease. Immunological defects have been shown to play a significant role in the progression of BD. The serum levels of two long non-coding RNAs (lncRNAs), NEAT1 and MALAT1, were examined in patients with BD to identify their role in the disease pathogenesis. Both lncRNAs were mentioned as essential regulators of innate immune responses and have a crucial role

in inflammatory diseases. Fifty patients with BD and a similar number of control individuals were involved in our study. At enrollment, data was collected from patients and controls, and the disease severity in active cases was determined using the Behçet's Disease Current Activity Form (BDCAF). Levels of the two studied biomarkers in the serum, NEAT1 and MALAT1, were investigated by quantitative RT-PCR (qRT-PCR). NEAT1 levels were significantly turned down in BD patients (fold changes = 0.77,

$p = 0.0001$ ) and correlated negatively with the BDCAF ( $r = -0.41$ ;  $p = 0.003$ ). On the other hand, the MALAT1 levels were significantly up-regulated in BD patients (fold changes = 2.65,  $p = 0.003$ ). Serum levels of NEAT1 were significantly decreased in patients with active states than in stationary cases (0.387 versus 1.99, respectively;  $p = 0.01$ ) and compared with controls ( $p = 0.001$ ). Also, NEAT1 levels were significantly increased in patients with stationary states compared to controls ( $p = 0.03$ ). There was a positive association between NEAT1 and MALAT1 levels among BD patients ( $r = 0.29$ ,  $p = 0.04$ ). Our findings demonstrate a possible role of NEAT1 and MALAT1 in the pathogenesis of BD.