

MTCH1 ANTIBODIES IN NEURO-BEHÇET'S DISEASE

H. Haytural¹, N. Yalçinkaya¹, M. Küçükerden¹, C. Ulusoy¹, S. Turan¹,
E. Şehitoğlu², E. Uğurel², F. Çavuş², B. Vural², E. Tüzün¹

¹*Department of Neuroscience and* ²*Department of Genetics, the Institute for Experimental Medicine, Istanbul, Turkey*

Objective: The central nervous system (CNS) involvement, named as neuro-Behçet's disease (NBD), develops in 5-10% of BD patients and generally afflicts the brain parenchyma and less frequently the brain vessels and meninges. Although antibodies directed against streptococci and heat shock proteins have suggested an autoimmune nature, no disease-specific neuronal antibodies have so far been defined in NBD.

Material and Methods: In an attempt to identify disease-specific antibodies in NBD, serum samples of 32 NBD, 98 BD, 47 multiple sclerosis, 21 neuromyelitis optica patients and 100 healthy controls were screened using protein microarray, immunoblotting and immunohistochemistry.

Results: Screening with a protein microarray led to identification of autoantibodies to mitochondrial carrier homolog 1 (Mtch1), a presenilin-associated protein involved in apoptosis pathways. High-titer Mtch1-antibodies were detected in 18 NBD, 47 BD, 3 multiple sclerosis and 1 neuromyelitis optica patient's serum sample but not in healthy controls. These results were confirmed with immunoblotting studies using seropositive and seronegative patients' sera and a commercial Mtch1 antibody. Immunohistochemistry studies showed cytoplasmic neuronal staining in sera of all Mtch1-antibody positive patients and this staining pattern colocalized with that obtained with a commercially available Mtch1 antibody.

Conclusion: In our NBD cohort, Mtch1 antibodies had a 56% sensitivity at a 98% specificity suggesting that these antibodies may be utilized as a disease biomarker. Furthermore, presence of antibodies directed against an apoptosis protein might indicate the significance of apoptosis in NBD pathogenesis.