O2. SUPEROXIDE DISMUTASE ACTIVITY IN BLOOD OF PATIENT WITH PARKINSON'S DISEASE

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ABSTRACT

Oxidative stress secondary to dopamine metabolism has been proposed as a potential pathogenic factor in the degenerative process of Parkinson's disease (PD). Biochemical abnormalities extending beyond the central nervous system have been identified in these patients . The aim of this study was to investigate the biochemical changes of oxygen free radical-metabolizing enzyme in erythrocytes of these patients and also to investigate whether there is any differences in the antioxidant activity between early and advanced cases of PD. Twelve diagnosed patients, without any clinical fluctuations (NF), nine patients in a late phase of the disease with severe motor fluctuations (MF) in response to levodopa therapy, and seventeen normal controls (NM) were included in this study. Erythrocyte superoxide dismutase (SOD) was determined as a measure of antioxidant activity. Significant lowering of SOD activity was found among MF group compared with NF and NM (26.10±8.56, 55.40± 14.84, 48.78±12.07 u/10^6 cell, respectively). However, there was no significant difference of SOD activity between NF and NM. These findings indicate the inverse relationship between the activity of SOD and the severity of the disease and may suggest the neuroprotective role of antioxidant agents.