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Research paper

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Interleukin-1 β , Interleukin-1 receptor antagonist, Interleukin-6, Interleukin-10, and Tumor Necrosis Factor- α Levels in CSF and Serum in Relation to the Clinical Diversity of Parkinson's Disease

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ABSTRACT

Several parameters representing the clinical diversity of Parkinson's disease (PD), including severity, phenotypes, cognitive decline, anxiety and depression were analyzed to examine the link with interleukin-1 β (IL-1 β), the interleukin-1 receptor antagonist (IL-1RA), IL-6, IL-10, and tumor necrosis factor- α (TNF α) and also to determine the relationship between levels of these factors in serum and cerebrospinal fluid (CSF). Significantly elevated serum IL-1 β and IL-6 and reduced IL-1RA levels were found in the PD group. In CSF and serum, inflammatory factors behaved differently, with increased CSF TNF α indicating rapid PD progression, and increased IL-1 β in serum. A low level of IL-6 was associated with a longer duration of PD. Anxiety, depression, non-tremor phenotype and late-onset PD correlated with a high serum level of IL-10. The serum TNF α level was lower in PD patients with mild cognitive impairment compared to controls. Serum IL-1 β , IL-6 and IL-10 levels correlated with CSF markers.

Keywords

Parkinson's disease; CSF; inflammation; biomarker; tremor phenotype; IL-1 β ; TNF α ; interleukins, depression.

1. Introduction

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