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Poster Presentation

Soluble CD18 as an Inflammation Reducing Agent in Parkinson's Disease

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Abstract

Parkinson's disease (PD) is a very common neurodegenerative disease among the elderly population. Current treatments for Parkinson's disease are based on symptom therapy but not the underlying cause of the disease. This disorder is caused neuronal death which triggers the activation of resident glial cells. This situation leads to neuroinflammation in the central nervous system. Activated glial cells produce molecular modulators such as cytokines and chemokines which induce an inflammatory environment that causes the recruitment of peripheral leukocytes. In physiological situation migration of leukocytes through blood brain barrier (BBB) into central nervous system is constrict limited due to presence of tight junctions and cell adhesion molecules (CAMs) but in an inflammatory environment because of the overexpression of intercellular CAM-1 (ICAM-1) and vascular CAM-1 (VCAM-1) on the BBB' endothelium the circulating immune cells can migrate into the brain. ICAM-1 is a glycoprotein on the surface of the endothelial and immune cells which attach to the integrin type CD18. Some studies have shown that soluble CD18 could block the receptor of CD18 in other places in body so I hypothesized that using of soluble CD18 can block receptors on the BBB's endothelium and avoid entry of peripheral leukocytes into the brain. If it happens it can prevent further cell death in the brain stem so progress of the disease will be so much slower.

Keywords: Neroinflammation, Parkinson's disease, CD18

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