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Poster Presentation

The Role of Interlukin-6 of Immune Cells in Neuronal Dysfunctions in the Autism Disease

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Abstract

About thirty years ago, the interleukin-6 (IL-6) which is the proinflammatory cytokine, was detected as the differentiation factor of B cell. IL-6 is able to induce maturation in B cells and as a result, B cells achieve the ability to produce antibodies. In addition to immune responses, the role of IL-6 has been known in neurogenesis (neurons and glial cells). The studies have showed that the abnormal immune responses are associated to the autism. In the autism disease, the levels of cytokines increase in blood, brain and cerebrospinal fluid (CSF). Conclusion: Increased levels of IL-6 in the brain of mouse are related to the autism properties such as abnormal cognitive abilities, loss of learning, anxiety, abnormal habits and reduction of social behaviors. Furthermore, Increased levels of IL-6 are associated to preventing of the transmission of inhibiting/inducing synaptic secretions. Also, IL-6 results in abnormal changing in the shape, length and distribution pattern of dendritic cells and can be neurotoxic. Findings show that the increase of IL-6 in the brain can relatively mediate the autism-like behaviors which are created by unbalancing the neuron circuits and dysfunctions of synaptic formations. High expression of IL-6 in several major brain diseases and animal models shows that it can play an important role in neuropathology and that is why IL-6 is the target for strategic treatment.

Keywords: Autism, Interlukin, Neurogenesis

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