KONTRIBUSI INFLAMASI TERHADAP PATOGENESIS PENYAKIT PARKINSON

Abstrak:

Parkinson’s disease is one of neurodegenerative diseases which is the second most common after Alzheimer’s disease in the world. It is a chronic disease with selective loss of dopaminergic neurons within the substantia nigra (SN) pars compacta (pc) of the midbrain. The disease represents a complex interaction between the inherent vulnerability of the nigrostriatal dopaminergic system, a possible genetic predisposition, and exposures to environmental toxins including inflammatory triggers. Until now, the exact cause of Parkinson’s disease remains uncertain, but recent studies suggest neuroinflammation and microglia activation play important roles in Parkinson’s disease pathogenesis. Evidence now suggest that chronic neuroinflammation and systemic inflammation are consistently associated with the patophysiology of Parkinson’s disease. Activated microglia and increased level of pro-inflammatory cytokine such as Tumor Necrosis Factor (TNF)-α, interleukin (IL)-2, IL-6, RANTES, Reactive Oxygen Species (ROS) and Nitric Oxide (NO) have been reported from Parkinson’s disease patients and in animal models of Parkinson’s disease. The blood brain barrier permeability dysfunction is also a contributing factor to the pathology of this disease. In this review, we discuss about neuronal cell pathology in Parkinson’s disease, its possible relationship with neuroinflammation and systemic inflammation, blood brain barrier dysfunction and pro-inflammatory cytokine released during the disease’s progressivity. Lastly, we also review the epidemiological data suggest about the inflammation and the increased risk of Parkinson’s disease. More research are needed to undercover the role of inflammation in Parkinson’s disease. With a better understanding about the relationship between inflammation and Parkinson’s disease cross-talk, the bright future with the possibility of specific immunomodulatory drugs play a role to limit a progressivity of Parkinson’s disease is no longer just a dream.

Keyword:

Daftar Pustaka:

Broussolle, E. et al. Relation of putamen and caudate nucleus F-Dopa uptake to motor and cognitive performances in Parkinson’s disease Journal of the Neurological Science 1999 -
Carr, J. Tremor in Parkinson’s disease Parkinsonism and Related Disorder 2001 -
Cersosimo, M. G. & Benarroch, E.E. Autonomic involvement in Parkinson’s disease: Pathology, pathophysiology, clinical features and possible peripheral biomarkers. Journal of the Neurological Sciences 2011 -
Chen, H. Peripheral inflammatory biomarkers and risk of Parkinson's disease Am J Epidemiol. 2008 -
Collins, L.M. Toulouse, A. Connor, T.J. & Nolan, Y.M. Contributions of central and systemic inflammation to the pathophysiology of Parkinson’s disease Neuropharmacology 2012 -