The 1st International Neuroinflammation Congress and 1st Student Festival of Neurosience

Shefa Neuroscience Research Center, Tehran, Iran, 11-13 April, 2017

The Neuroscience Journal of Shefaye Khatam

Volume 5, No. 2, Suppl 2

Poster Presentation

The Effects of Exercise on Treatment of Neuroinflammatory Disorders

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***Published:* 11 April, 2017**

Abstract

There are many reasons for decrease of the functional activity of the brain like aging of the neurons, bacterial diseases and neuro inflammations. Nowadays, the effects of exercise on physical and mental health have been proven but its effects on motor functions as well as neuro inflammation is an issue that has recently been studding. Neuro inflammation is a mechanism that can be caused by Bacterial diseases or aging the neurons of the central nervous system. The cause of the inflammation can be due to increasing of inflammatory cytokines such as interleukin (IL) 1β or decreasing of anti-inflammatory cytokines. Neuroinflammation leads to gradual destruction of neurons in CNS that can originates Alzheimer disease (AD), Parkinsonism & Multiple sclerosis (MS).In some studies such as O'calaghan et al, Radak et al & Schweiter et al, it is shown that regular aerobic exercises can facilitates learning in AD mice.Similar to these studies, Larson et al performed another study that showed regular aerobic exercises can delay the onset of AD in human by reducing the inflammatory cytokines. In addition to the beneficial effects of exercises on AD, it has demonstrated its good effects on Parkinsonism and MS. The exact mechanism of exercise in reducing the inflammatory cytokines is unknown but it's assumed that exercise can reduce inflammation by decreasing fat. Although most of the studies showed aerobic exercises are more beneficial but endurance exercises can increases anti-inflammatory cytokines too. In addition to the kind of the exercises, the period of exercise is important too. Short term aerobic an exercise (just for 3 weeks) increases oxidative stresses and the chance of neuro-inflammation. Long term aerobic exercise can prevent and treat neuro inflammations diseases like AD, MS and Parkinsonism by reducing inflammatory cytokines and increasing the anti-inflammatories. However, the exact mechanism is unknown Future studies should consider the intensity and the best kind of exercise to have the most beneficial effects.

Keywords: Exercise, Neuroinflammation, Aerobic exercise

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