

Review Article

Role of viruses in the destruction of the central nervous system and its impact on the multiple sclerosis

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Abstract

Multiple sclerosis (MS) is a chronic inflammatory immune-mediated disease of the central nervous system. Despite extensive investigations, many aspects of etiology and pathophysiology remain unclear. In multiple sclerosis patients, immune system reacts against autologous proteins in the myelin membrane. Most evidences support the hypothesis that both genetic and environmental factors contribute to disease development. But after the failure of genetic findings to explain the reason for the unequal incidence of MS in identical twins, investigators focused further on environmental factors such as vitamin D deficiency, smoking, living in different latitudes and perhaps the most importantly the role of viruses in people whom are genetically susceptible to MS. There is increasing evidence that viruses may play important role in MS pathogenesis following environmental triggers. Recently, studies focused on the role of *herpes virus* family, especially *Epstein-Barr virus*, *human herpes virus 6* (HHV-6) and *Varicella Zoster virus*, as the virus is prevalent in society. This review mainly focused on the identification of important viruses with key role in MS the mechanism behind pathogenesis and describes the animal models of MS. The results of researches are shown strong evidence of the virus or antibodies to viral components in active plaques in MS affected patients, but still cannot be stated with certainty that one or more specific viruses are simultaneously trigger the disease. Further studies are required to prove the pathogenesis of viruses in MS.

Keywords: Multiple Sclerosis, Environmental factors, Virus, Myelin

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