

Immunopathogenesis of ms

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Abstract

Multiple sclerosis (MS) is classically defined as chronic inflammation of the central nervous system (CNS) but is better described as a multi-component disease with a balance between pathophysiological mechanisms. The immune dysregulation in MS is considered to be multifactorial, involving a 'perfect storm' of genetic susceptibility, epigenetic and post-genomic events, and environmental factors such as viral pathogens [e.g. EpsteinBarr virus (EBV)], chemicals, smoking, diet (obesity) and vitamin D levels (sun exposure). The immune dysregulation in MS involves 'crosstalk' between the innate and adaptive immune systems. Innate immune cells such as dendritic cells (DCs) are also antigen-presenting cells (APCs). The binding of antigen to the cell surface activates DCs, which communicate with naïve CD4⁺ T cells and shape the adaptive immune response. Many new options to interfere with the course of MS have become available over the past few years. Main intervention points with the current range of disease-modifying therapies are antigen presentation, peripheral immune response, the BBB and 'target tissue' within the CNS itself. Each type of immunotherapy correlates with specific components of the underlying immunopathology of MS.

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Biography

Prof. Hossam Hamdy is Professor of Surgery and Medical Education, the Institute of Leadership in Higher Education, Sharjah University. An internationally known medical educator and active Pediatric and Dean College of Medicine, Arabian Gulf

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