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## Poster Presentation

# The Role of Th1 Lymphocytes in The Pathogenesis of Multiple Sclerosis (MS)

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## *Abstract*

Th1 lymphocytes produce cytokines such as IL-2, IFN-γ, and TNF-α, TNF-β and GM-CSF. IFN-γ is the most important Th1 cell cytokine that induces the production of IgG, activation of macrophages, enhancing phagocytosis, and also increasing MHC class I and class II molecules. Increasing serum level of Th1 cytokines have also been observed in MS patients. It has also been proven that in humans, exacerbation of MS disease is often accompanied by the increase of myelin-specific Th1 cells in the CSF and according to pathological observations, in thrombolytic plaques, the accumulation of Th1 cells and the production of IFN-γ is directly linked to the demyelination process, which also proves the pathogenicity of Th1 cells. Moreover, the treatment of multiple sclerosis with IFN-γ increases the severity of the disease; while treatment with an anti-IFN-γ antibody improves the disease. Th1 cells cytokines activate macrophages, and activated macrophages cause damage to myelin and subsequently oligodendrocytes and can also produce other inflammatory cytokines that can exacerbate tissue damage. Conclusion: According to studies, Th1 lymphocytes seem to play an important role in immuno-pathological reactions in MS. Preventing the entry of Th1 cells into the CNS, differentiation of native T-cell into Th1 cellsand also activation of Th1 cells, and in the other hand targeting cytokines secreted from Th1 cells or their receptors can significantly reduce the process of demyelination in MS. This review s tudy aimed to investigate the role of Th1 Lymphocytes in the Pathogenesis of Multiple Sclerosis.

***Keywords:*** Multiple Sclerosis, Th1 Lymphocyte, IFN-γ ,Macrophage

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