Epigenetic aspects of multiple sclerosis and future therapeutic options

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Abstract
Multiple sclerosis (MS) is a chronic inflammatory and neurodegenerative disease accompanied by demyelination of neurons in the central nervous system that mostly affects young adults, especially women. This disease has two phases including relapsing-remitting form (RR-MS) by episodes of relapse and periods of clinical remission and secondary-progressive form (SP-MS), which causes more disability. The inheritance pattern of MS is not exactly identified and there is an agreement that it has a complex pattern with an interplay among environmental, genetic and epigenetic alternations. Epigenetic mechanisms that are identified for MS pathogenesis are DNA methylation, histone modification and some microRNAs' alternations. Several cellular processes including apoptosis, differentiation and evolution can be modified along with epigenetic changes. Some alternations are associated with epigenetic mechanisms in MS patients and these changes can become key points for MS therapy. Therefore, the aim of this review was to discuss epigenetic mechanisms that are associated with MS pathogenesis and future therapeutic approaches.

Author keywords
Epigenetic
Methylations
Modification
Multiple sclerosis