

عنوان مقاله:

Effect of oral genistein administration in early and late phases of allergic encephalomyelitis

محل انتشار:

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خلاصه مقاله:

Objective(s): Experimental allergic encephalomyelitis (EAE) is an autoimmune disease validated as animal model of multiple sclerosis (MS). Administration of genistein, a phytoestrogenic component of soy, to mice at the onset of EAE is known to attenuate the clinical signs of the disease. The potential effects of genistein on established EAE is less studied. In the current study, we aimed to compare the effects of genistein administration on EAE severity in early and late phases of the disease. Materials and Methods: The C57BL/6 mice were induced with EAE, using MOG 35-55 and gavaged with genistein (300 mg/kg) either after the appearance of the first clinical sign or 30 days post disease induction for ten days. 24 hr after the last gavage, mice were sacrificed. Brains and spleens were removed for assessing lymphocyte proliferation, cell cytotoxicity, and cytokine profile. Spinal cords were dissected to assess the amount of demyelination using Luxol fast blue/cresyl violet staining. Results: Administering mice with genistein, after the establishment of EAE, did not reverse the clinical signs of disease. However, treating with genistein at the onset of disease alleviated the clinical signs by reducing neuronal demyelination. Genistein suppressed the production of IFN- γ and enhanced IL-10 secretion in splenocyte and brain. Genistein also reduced IL-12 and TNF- α secretion in splenocytes, suppressed the proliferation of T-cells, and reduced the cell cytotoxicity. Conclusion: Genistein oral therapy might only reduce EAE severity if started in early phases of the disease.

کلمات کلیدی:

Experimental allergic encephalomyelitis (EAE), Genistein, Immunomodulation, Interferon-gamma, Multiple Sclerosis

