

عنوان مقاله:

Evaluation of immunoregulatory effect of Dicrocoelium dendriticum eggs on Th-17 and Treg cells on EAE model

محل انتشار:

شانزدهمین کنگره بین المللی ام اس (سال: 1398)

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خلاصه مقاله:

Background: Multiple sclerosis (MS) is an inflammatory autoimmune disease of the central nervous system (CNS). Experimental autoimmune encephalomyelitis (EAE) is an appropriate model for the study of the immunological and pathological mechanisms in MS. Pro-inflammatory cytokines and the balance between effector T cells specially Th17 and regulatory T cells (Treg) orchestrate the pathogenic events in EAE. To date, hygiene hypothesis and administration of parasite antigens for treatment of autoimmune diseases is novel, new and noteworthy for researchers. According to hygiene hypothesis there is a direct relationship between higher levels of hygiene and dramatic increases of autoimmune disease in developing countries. Researchers around the world used, *Fasciola hepatica* egg antigens, *Trichuris trichiura* larvae and *Schistosoma* eggs for the treatment of autoimmune diseases and their anti-inflammatory effects have been reported. Since the *Dicrocoelium dendriticum* eggs are available in Iran and they have a lot of antigenic similarities with *Schistosoma* and *Fasciola* helminths, we used these eggs for the evaluation of prophylactic and treatment effects of them on EAE disease. Material and Methods: *Dicrocoelium dendriticum* eggs were extracted. Female C57BL/6 mice were immunized with specific antigen MOG35-55, and then eggs are injected through the prophylactic and treatment protocols. Clinical symptoms and other relevant parameters were assessed daily. The mRNA expression of TGF- β , IL-10, IL-6, IL-23 and IL-17 was assessed with a Real Time PCR technique. Furthermore Secretion of TGF- β and IL-17 cytokines were determined by ELISA. Results: The analysis of data indicated that clinical symptoms in prophylaxis and treatment groups were decreased significantly in comparison with the untreated control group which was accompanied by a diminishment in demyelination of CNS. Our results also showed significant decrease in the mRNA expression of disease-associated cytokines as well as an

increase in the mRNA expression of the anti-inflammatory cytokines in prophylaxis and treatment groups which inhibited the differentiation of Th17 cells whilst promoting Treg cell differentiation via regulating cytokines secreted of these cells. Conclusion: *Dicrocoelium dendriticum* egg ameliorate the clinical symptoms of the EAE model through the modulation of Th17, Treg and related cytokines of these cells

کلمات کلیدی:

Experimental autoimmune encephalomyelitis, Multiple Sclerosis, *Dicrocoelium dendriticum*, Th17, Treg

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