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## Effect of oral herbal oil supplement (*Cannabis sativa* L, *Oenothera biennis* L) and advised hot-nature diet on clinical signs and symptoms and inflammatory factors in patients with multiple sclerosis

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**Background:** Multiple sclerosis (MS), ensuring demyelization results in physical disability, is the most chronic and inflammatory disorder. Because of limited efficacy and adverse side effects of the current treatments, identifying novel therapeutic and protective agents is important. For many years, it has suspected that the risk of developing MS might be associated with increased dietary intake of saturated fatty acids and consumption of Cold nature foods. This study aimed to assess the potential therapeutic and protective effects of hemp seed and evening primrose oils as well as Hot-nature dietary intervention on mild MS patients.

**Methods and materials:** In this double blind, randomized trial, 100 RRMS patients (Expanded Disability Status Scale <6) allocated into three groups: "Group A" who received co-supplemented oils with advising Hot nature diet, "Group B" who received olive oil as placebo, "Group C" who received co-supplemented oils. Mizadj, Clinically EDSS, relapse rate and functional score as well as immunological factors (plasma cytokines of IL-4, IFN- $\gamma$  and IL-17), biochemical parameters (GGT, AST, ALT, red blood cells PUFA and erythrocyte membrane fatty acids composition, D-6-desaturase (FADS2), secretory PLA2 (sPLA2) assessed at baseline and after 6 months.

**Results:** Mean follow-up was  $180 \pm 2.9$ SD days (N=65, 23 male and 42 female aged  $34.25 \pm 8.07$  years with disease duration  $6.80 \pm 4.33$  years). There was no significant difference in studies parameters at baseline. After 6 months, significant improvements in Mizadj, EDSS score and relapse rate found in the groups A and C while the group B only showed a border significant decrease in relapse rate. Immunological and biochemical parameters showed improvement in the groups A and C whereas there was worsening condition for the group B after the intervention, and immunological parameters correlated with the EDSS score in-group A. After 6 months, the erythrocyte cell membrane with regard to specific fatty acids, showed improvement in the group A and C whereas there was worsening condition for the group B after the intervention.

**Conclusion:** This study suggests that co-supplemented herbal oils with hot nature diet can have beneficial effects in reversing the signs and improve clinical outcome in RRMS patients which were confirmed by immunological and biochemical findings. This intervention causes an increase PUFAs in MS patients and improvement in the erythrocyte membrane fatty acids composition and it could be an indication of restored plasma stores, and a reflection of disease severity reduction.

### Biography

Soheila Rezapour-Firouzi completed PhD from Department of Immunology, Microbiology and Genetics; Faculty of Medicine, Urmia University of Medical Sciences, Urmia, Iran. In 2013, she published her papers on "Effect of Oral Herbal Oil Supplement (*Cannabis sativa* L, *Oenothera biennis* L) and Advised Diet with Hot-Nature on Clinical Signs and Symptoms and Inflammatory Factors in Multiple Sclerosis Patients". This supplement oil was named MS-NUT; it means Nutrition for MS Patients. Her research is going to be published with the name of the peace, justice and freedom for all around the world, presents for the treatment of suffers of Multiple Sclerosis.

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