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Regulation of lipid-dependent membrane enzymes by hot nature diet with co-supplemented hemp seed, evening primrose oils intervention in multiple sclerosis patients

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Background: Multiple sclerosis (MS) is the most chronic and inflammatory disorder that result in physical disability. Because of limited efficacy and adverse side effects, identifying novel therapeutic and protective agents is important. This study was aimed to assess regulation of surface-membrane enzymes by hemp seed and evening primrose oils as well as hot nature dietary intervention in Relapsing Remitting MS (RRMS) patients.

Methods and materials: In this double blind, randomized trial, 100 RRMS patients with EDSS<6 were allocated into 3 groups: "Group A" who received co-supplemented hemp seed and evening primrose oils with advising Hot nature diet, "Group B" who received olive oil as placebo, "Group C" who received the co-supplemented oils. Clinically EDSS and functional score as well as biochemical parameters (blood cells PUFA, FADS2, Serum sPLA2) were assessed at baseline and after 6 months.

Results: Mean follow-up was 180±2.9SD days (N=65, 23 M and 42 F aged 34.25±8.07 years with disease duration 6.80±4.33 years). There was no significant difference in studies parameters at baseline. After 6 months, significant improvements in EDSS and functional score were found in the group A and C while EDSS and pyramidal score showed significant increase in group B. Biochemical parameters showed improvement in the A and C groups whereas there was worsening condition for the group B after the intervention.

Conclusion: The co-supplemented hemp seed and evening primrose oils with hot nature diet can have beneficial effects in improving clinical symptoms and signs in RRMS patients which were confirmed by regulation of surface-membrane enzymes.

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