Abstract

Introduction: Inflammation is one of the main contributory factors to the etiopathogenesis of multiple sclerosis (MS). Dietary interventions with Lipia citriadora (lemon verbena) extracts have been proved to be effective in the prevention of inflammatory diseases. Objectives: The aim of this study is to evaluate the effect of lemon verbena supplementation in pro- and anti-inflammatory serum biomarkers of patients with different clinical subtypes of multiple sclerosis. Methods: The effect of lemon verbena supplementation (10% w/w verbascoside) was evaluated in a randomized, double-blinded placebo-controlled study with 30 participants classified in relapsing-remitting (n=10), primary progressive (n=5) and secondary progressive (n=15) MS presentations. Serum cytokine and C reactive protein levels were assessed in intervention and control groups for each MS clinical subtype after 28 days of dietary supplementation. Results: Serum levels of C reactive protein and 8 cytokines/inflammatory markers were studied. Secondary progressive MS- supplemented patients showed C reactive protein concentrations significantly lower compared to the placebo group (p<0.005). IFN- levels decreased for all MS- treated groups whereas IL-12 diminished levels were observed for relapsing-remitting type (p<0.05). Anti-inflammatory cytokine concentrations of IL-4 (difference 2.98 ± 2.99 pg/mL) and IL-10 (difference 1.78 ± 5.54 pg/mL) increased in secondary progressive MS patients (p<0.05). Conclusion: The variation of several pro- and anti-inflammatory markers after supplementation suggests that lemon verbena extracts may affect cytokine profiles in multiple sclerosis. Further investigation on dietary components with antioxidant and anti-inflammatory properties may contribute to understand MS pathogenesis and ameliorate MS symptoms.

Keywords

Lemon verbena, Dietary Intervention, Multiple Sclerosis, Cytokines.