

Effects of *Cuminum cyminum* L. Essential Oil Supplementation on Components of Metabolic Syndrome: A Clinical Trial

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Abstract : Objectives and goals: The prevalence of metabolic syndrome (MetS), as a major health burden for societies, is increasing. This clinical trial was conducted to evaluate the effects of CuEO supplementation on anthropometric indices, systolic and diastolic blood pressure, blood glucose level, insulin resistance and serum lipid level in patients suffering from MetS. Methods: This was a randomized, triple-blind, placebo-controlled clinical trial in which 56 patients with MetS aged 18-60 years who fulfilled the eligibility criteria were randomly allocated to an intervention or a control group. Inclusion criteria for the study were comprised of diagnosis of MetS according to the new International Federation of Diabetes. The exclusion criteria were defined as: taking herbal supplements, use of drugs having evident interaction with cumin such as anti-depressant drugs, vitamin D, omega 3, selenium, zinc, smoking, pregnancy, or breastfeeding, suffering from cancer, having any history of gastrointestinal and hepatic, cardiovascular, thyroid and kidney disorders, and menopause. 75 mg CuEO or placebo soft gels were administered three times daily to the participants for eight weeks. The soft gel consumption was checked by asking the participants to bring the medication containers in the follow-up visits at the 4th and the 8th weeks of the study. Data pertaining to blood pressure, height, weight, waist circumference, hip circumference and BMI, as well as food consumption were collected at the beginning and end of the study. Fasting blood samples (glucose, triglyceride, total cholesterol, HDL-cholesterol and LDL-cholesterol) were obtained and biochemical measurements were assessed at the beginning and end of the study. Results: At eight weeks, a total of 44 patients completed this study. Except for diastolic blood pressure (DBP), the other assessed variables were not significantly different between the two groups. In intra group analysis, placebo and CuEO groups both had insignificant decrements in DBP (mean difference [MD] with 95% CI: -3.31 [-7.11, 0.47] and -1.77 [-5.95, 2.40] mmHg, respectively). However, DBP was significantly lower in CuEO compared with the placebo group at the end of study (81.41 ± 5.88 vs. 84.09 ± 5.54 mmHg, MD with 95% CI: -3.98 [-7.60, -0.35] mmHg, $p < .05$). Conclusions: The results of this study indicated that CuEO does not have any effect on MetS components, except for DBP in patients with MetS.

Keywords : blood pressure, fasting blood glucose, lipid profile, waist circumference

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