Effects of *Marrubium vulgare* Extract on Hormonal Parameters and Clinical Findings in Polycystic Ovarian Syndrome: A Randomized, Placebo-Controlled, Triple-Blind Clinical Trial

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ABSTRACT

Introduction: Polycystic ovary syndrome (PCOS) is among the most common endocrine disorders in women of reproductive age. *Marrubium vulgare* has long been used in traditional Persian medicine to treat symptoms related to PCOS. However, limited studies have investigated its effect in treating this condition. The present study evaluated the impact of a dry extract of *Marrubium vulgare* on hormonal parameters and clinical symptoms of PCOS.

Methods and Materials: In this randomized, placebo-controlled, triple-blind clinical trial, patients diagnosed with PCOS according to the Rotterdam criteria, who were referred to Imam Reza Hospital between 2019 and 2023, were enrolled and randomly assigned to either intervention or placebo groups. The intervention group received 250 mg of dry extract of the *Marrubium vulgare* (two capsules daily for three months), while the control group was administered a placebo. Body mass index (BMI), testosterone levels, estradiol, and progesterone hormones, and serum levels of cholesterol, triglycerides, and fasting blood sugar were evaluated in all patients at the beginning and after the completion of the three-month treatment period. The severity of acne, hirsutism, and irregularity in the menstrual period of the patients was also checked before and after the intervention. Data were analyzed using SPSS statistical software version 26.

Results: In the placebo group, none of the evaluated criteria at the end of the trial was significantly different from the beginning of the study ($p = 0.05$). In the intervention group, BMI, hirsutism score, fetal bovine serum (FBS), and testosterone levels significantly reduced at the end of the study. Also, at the end of the study, the hirsutism frequency, dysmenorrhea, and irregular menstruations in the intervention group were significantly lower than in the placebo group ($p = 0.048$, $p = 0.022$, and $p = 0.047$, respectively). The mean reduction in the hirsutism score, FBS, and testosterone levels was higher in the intervention group than in the placebo group ($p = 0.030$, $p = 0.002$, and $p = 0.001$, respectively).

Conclusion and Discussion: Our findings suggest that *Marrubium vulgare* could serve as an effective and safe treatment for PCOS.

Keywords: Herbal medicine, Marrubium, Polycystic ovary syndrome

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