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File: ■ Lemon Balm (*Melissa officinalis*, Lamiaceae)
■ Lipid Profiles
■ Hyperlipidemia

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RE: Supplementation with Lemon Balm Leaf Powder Improves Lipid Profiles in Patients with Borderline Hyperlipidemia

Jandaghi P, Noroozi M, Ardalani H, Alipour M. Lemon balm: A promising herbal therapy for patients with borderline hyperlipidemia—A randomized double-blind placebo-controlled clinical trial. *Complement Ther Med.* 2016;26:136-140.

Hyperlipidemia is a risk factor for cardiovascular disease. The current treatment options for hyperlipidemia are not always effective and are often associated with adverse side effects. Studies suggest that lemon balm (*Melissa officinalis*, Lamiaceae) may be a safer and more effective treatment alternative. The aim of this parallel, randomized, double-blind, placebo-controlled, clinical trial was to explore the effects of lemon balm supplementation on the lipid profiles of patients with borderline hyperlipidemia.

This study was conducted at Ansari Hospital in Tehran, Iran, between January and July 2014. Male and female patients (age range, 25-65 years) were included if they had at least 1 of the following: serum total cholesterol, 200-260 mg/dL; low-density lipoprotein (LDL), 100-160 mg/dL; and serum triglycerides, 150-300 mg/dL. Patients were excluded if they were smokers, had any health conditions/complications, were intolerant to lemon balm, or consumed any medications that would interfere with the outcome of the study.

Patients were randomly divided into 2 different groups and instructed to consume 2 capsules containing 500 mg of lemon balm leaves (collected and prepared in Tehran, Iran; MO group) or a placebo (500 mg of starch powder; P group) 3 times a day (after consuming a meal) for 2 months. Both capsules were the same size, shape, and color. The chemical profile of the lemon balm leaves was evaluated using gas chromatography and mass spectrometry. Patients were instructed to visit Ansari Hospital twice per month to be monitored and ensure compliance. They were told not to change their diet and to avoid physical activity and other similar products during the study.

Patients were interviewed at the beginning of the study to obtain demographic data. At the beginning and end of the intervention period, body measurements, a 24-hour dietary recall questionnaire, a physical activity questionnaire, and a blood sample (after fasting) were obtained from the patients. Lipid profiles and liver enzymes were evaluated from

the blood samples.

A total of 64 patients participated in the study (32 in each group). A few patients discontinued the study (2 in the P group and 3 in the MO group). The only adverse effects reported were headaches (n=1) and dizziness (n=1) in the MO group and dizziness (n=1) in the placebo group. There were no significant differences between the 2 groups in terms of patient demographics and daily dietary intake (except for saturated fatty acids, $P < 0.05$).

At the end of the study, total cholesterol was significantly reduced for both the MO group ($P = 0.000$) and the P group ($P = 0.03$) compared to baseline, but these effects were not significantly different between the 2 groups ($P = 0.27$). At the end of the study, there were no significant differences found between the groups for high-density lipoprotein (HDL), triglycerides, fasting blood glucose, body mass index, or physical activity. By the end of the study, LDL was significantly decreased in the MO group ($P = 0.002$) and significantly increased in the P group ($P = 0.8$); the difference between the 2 groups was significant ($P = 0.02$). The LDL:HDL ratio significantly increased only for the P group ($P = 0.003$). There were no significant effects on liver enzymes, with the exception of aspartate transaminase (AST), which was significantly increased in the P group ($P = 0.003$) but not in the MO group (a significant difference was found between the groups, $P = 0.009$).

The results of this 2-month study indicate that consumption of lemon balm leaf powder significantly lowered LDL and the liver enzyme AST compared to a placebo treatment. Such outcomes suggest that lemon balm supplementation is both safe and effective for patients with mild hyperlipidemia. Although the lipid profiles did not improve to the extent that they did in a study that used lemon balm essential oils, the authors suggest that this is a safer form of supplementation.¹ The authors also suggest that larger and longer trials with mechanistic investigations are needed to confirm the safety and efficacy of this supplement.

—*Laura M. Bystrom, PhD*

Reference

¹Chung MJ, Cho SY, Bhuiyan MJ, Kim KH, Lee SJ. Anti-diabetic effects of lemon balm (*Melissa officinalis*) essential oil on glucose- and lipid-regulating enzymes in type 2 diabetic mice. *Br J Nutr.* 2010;104(2):180-188.

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