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File: ■ Purslane (*Portulaca oleracea*, Portulacaceae)
■ Type 2 Diabetes
■ Lipid Profiles

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RE: Purslane Seed Intake Improves Anthropometrics, Serum Triglycerides, and Blood Pressure in Patients with Type 2 Diabetes

Esmailzadeh A, Zakizadeh E, Faghihimani E, Gohari M, Jazayeri S. The effect of purslane seeds on glycemic status and lipid profiles of persons with type 2 diabetes: A randomized controlled cross-over clinical trial. *J Res Med Sci.* 2015;20(1):47-53.

Purslane (*Portulaca oleracea*, Portulacaceae) is a traditionally used plant for the treatment of type 2 diabetes (T2D) and has been shown to have some antidiabetic effects in animal models. Several plant compounds found in purslane, including omega-3 fatty acids, β -carotene, α -tocopherols, ascorbic acid, glutathione, and flavonoids, have independently been shown to improve some metabolic parameters in patients with T2D. There is, however, limited information on the effects of purslane supplementation in people with T2D. Therefore, the aim of this randomized, crossover, clinical trial was to examine the effects of purslane seeds on lipid profiles and the glycemic status of individuals with T2D.

Patients with T2D were recruited from the Endocrine Research Center of Isfahan University Medical Sciences in Isfahan, Iran. Patients were included in the study if they had T2D (fasting plasma glucose [FPG] ≥ 126 mg/dL and blood sugar 2-h postprandial ≥ 200 mg/dL), were nonsmokers, did not change the dose of any type of medication 2 months prior to the study, and did not have any other health conditions that would interfere with the study.

For 5 weeks, patients consumed either 10 g/day of purslane seed powder from 1 sachet (manufacturer unknown) with 240 mL low-fat yogurt (intervention group) or 240 mL low-fat yogurt only (control group). Patients crossed over to the alternate treatment after a 2-week washout period. Compliance was monitored through phone interviews and by the number of empty sachets. Dietary intake was evaluated 3 times during each intervention period and physical activity was assessed once every 2 weeks. Lipid profiles and insulin levels were assessed from fasting blood samples collected from the patients before and after each intervention period. Body measurements and blood pressure also were evaluated.

The study patients (mean age, 51.4 ± 6.0 years) were more than 66% female (58% of these women were in menopause). All patients were taking oral hypoglycemic agents (OHAs), and a third of the patients were using dietary supplements (type not specified) throughout the study. Although there were no reports of severe adverse side effects during the study, there were 12 patients in the intervention group who had gastrointestinal problems.

In terms of micro- and macronutrient intake and physical activity, there were no significant differences found between the control and the intervention groups. At the end of the study, significant weight loss was found in the intervention group compared to the control group (-0.57 vs. 0.09 kg; P=0.003). There was also a significant reduction in body mass index (BMI) for the intervention group compared to the control group (-0.23 vs. 0.02 kg/m²; P=0.004).

While waist circumference was significantly reduced after the intervention (P=0.002), these changes were not significantly different from the changes in the control group (P=0.10). Similarly, FPG was reduced in both groups, but there were no significant differences found when comparing changes in the intervention group vs. the control group (-2.10 vs. -2.77 mg/dL; P=0.90). Additionally, no significant differences were found for serum insulin levels and insulin resistance scores after 5 weeks of purslane seed intake.

There were no significant differences found between the groups for changes in high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C), and total cholesterol levels. There was, however, a significant decrease in serum triglyceride levels found in the intervention group in comparison to the control group (-25.5 vs. -1.8 mg/dL; P=0.04). Systolic and diastolic blood pressure were significantly changed compared to baseline for the intervention group (P<0.01) but not for the control group. There were also significant differences found for changes in systolic blood pressure when comparing the intervention group with the control group (-3.33 vs. 0.5 mmHg; P=0.01), but nonsignificant improvements were seen for diastolic blood pressure changes (-3.12 vs. -0.93 mmHg; P=0.09).

The results of this study indicated that purslane seeds had minimal effects on FPG, insulin levels, and insulin resistance, but significantly improved weight, BMI, triglyceride levels, and blood pressure. These results differ from another human trial that found purslane seeds significantly reduced FPG and serum insulin in comparison to the OHA metformin.¹ The authors suggest that different methodologies may explain the discrepancy between the 2 studies. To better understand how purslane seeds may benefit people with T2D, future studies should evaluate the antihyperglycemic effects of this supplement in comparison with several OHAs, as well as elucidate the active components and mechanistic effects of this natural product with and without food. Also, detailed analysis of the active material should be performed.

—Laura M. Bystrom, PhD

Reference

¹El-Sayed MI. Effects of *Portulaca oleracea* L. seeds in treatment of type-2 diabetes mellitus patients as adjunctive and alternative therapy. *J Ethnopharmacol.* 2011;137(1):643-651.

Referenced article can be accessed at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4354065/>.

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