

ORIGINAL RESEARCH

Effects of Three Months of Honey Supplementation on Quality of Life and Neuropathy in Type 2 Diabetic Patients

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ABSTRACT

Context • Diabetic neuropathy, a common debilitating complication of type 2 diabetes, can occur despite adequate treatment. To date, there were no studies on the use of alternative medicine as an adjunct therapy for treating diabetic neuropathy.

Objective • To study the effects of three months of honey supplementation on insulin resistance, lipid profiles, oxidant status, nerve conduction, and Quality of life (QOL) in patients with diabetic neuropathy.

Methods/Design • The research team designed a single-arm, open-label study.

Setting • The study took place at the Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER) in Puducherry, India.

Participants • The study included 48 patients with diabetic neuropathy at the institute, with a mean age of 58.91 ± 7.976 years.

Intervention • Participants took honey for three months at a dose of 0.5 gm/Kg of body weight per day.

Outcome Measures • Participants completed the Neuropathy Total Symptom Score-6 (NTSS-6) questionnaire and the Norfolk QOL Diabetic Neuropathy

(Norfolk QOL-DN) questionnaire at baseline and postintervention. Also, participants' glucose levels, lipid profiles, and biochemical markers were obtained and a nerve conduction study was completed at baseline and postintervention.

Results • A significant reduction occurred in the NTSS-6 score ($P < .0001$) and the Norfolk QOL-DN total score ($P < .0001$) from baseline to postintervention. Participants' fasting blood glucose (FBG), triglycerides (TG), and total cholesterol (TC) decreased significantly, at $P = .0192$, $P = .0371$, and $P = .0049$, respectively. Their malondialdehyde (MDA), and inflammatory markers interleukin-6 (IL-6) and tumor necrosis factor alpha (TNF- α) also decreased significantly, and MDA showed a significant correlation with neuron specific enolase (NSE).

Conclusions • Three months honey supplementation reduced participants' subjective pain scores and symptoms from diabetic neuropathy and improved their QOL. However, the nerve conduction study showed that no significant change had occurred in motor velocity. (*Altern Ther Health Med.* 2021;27(S1):54-60).

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Diabetes mellitus is the most prevalent, noncommunicable disease worldwide. According to a national study by the Indian Council of Medical Research-India Diabetes (ICMR-INDIAB), India has 62.4-million people with type 2 diabetes.¹ Diabetes is a state of inflammation, where uncontrolled glycemic status is found to be associated with increased levels of chronic inflammatory markers, such as interleukin-6 (IL-6) and tumor necrosis factor alpha (TNF- α).² Further, Sandireddy et al have proposed that the chronic inflammation in diabetes is linked to cardiovascular autonomic and diabetic neuropathy.³

Diabetic neuropathy is the most common and debilitating complication associated with diabetes and affects more than 50% of patients with longstanding diabetes.⁴ The most common diabetic neuropathies are chronic, sensory-motor, distal symmetric polyneuropathy and autonomic neuropathies.^{4,5}