

Effect of Kalonji (*N. sativa*) Paratha (flat bread) Diet on Glycemic Control of Patients with Type-2 Diabetes

Research Article

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Abstract

Nigella sativa (*N. sativa*) has been used in traditional medicine and many studies have been performed in different communities in order to reveal the effects of it on medical disorders and chronic diseases. The aim of this study was to investigate the effects of Paratha Diet with *N. sativa* on postprandial glucose, Glycated hemoglobin, and Triglycerides. A randomized, double-blind, cross-over and clinical trial was conducted on 10 patients of both sexes with age group of 20-50 years old in City Of Jeddah, Kingdom of Saudi Arabia. In this study, treatment, sequence and time effects of intervention were evaluated and revealed that consumption of bread with *N. sativa* has significant treatment and time effects on postprandial glucose, Glycated hemoglobin.

Keywords: *Nigella sativa*; Diabetes-2; Glycemic control; Glycated hemoglobin (HbA1C); Postprandial Glucose Test (PPBS)

Introduction

Nigella sativa is a small plant originating in the Middle East and is found abundantly, growing wild in Egypt, Asiatic Turkey, and the Balkan states. *N. sativa* has tapering green leaves and rosaceous white, yellow, pink, pale blue or purplish flowers with 5-10 petals. The ripe fruit (capsule: 3-7 united follicles) contains numerous tiny seeds, dark black in color. The seed and oil of *N. sativa* was frequently used in ancient remedies (Unani, Ayurveda, Chinese and Arabic) in Asian countries and in the Middle-East [1]. The use of *N. sativa* seeds had been mentioned by Ibne-Sina (980-1037) in his famous book al-Qanun fit-Tibb [2]. Traditionally *N. sativa* is used as a medicament of a variety of disorders in the respiratory system, digestive tract, Cardiovascular System (CVS), kidney, liver, and immune system [3,4]. Its uses in fatigue and dispiritedness are antique. The most common traditional uses belong to the ailments, including asthma, bronchitis, rheumatism and related inflammatory diseases, indigestion, loss of appetite, diarrhea, dropsy, amenorrhea, dysmenorrhea, worms and skin eruptions. It is also used as antiseptic and local anesthetic [5-9].

Material and Methods

Study design A cross-over, double-blind, and randomized clinical trial was conducted in 10 type 2 diabetic patients of both sexes with

age group of 20-65 years old in Jeddah, Kingdom of Saudi Arabia and the diet was supplied for a period of two months.

Preparation of paratha

The *N. sativa* (black seed) was purchased from a local market. After several grinding and screening of seeds, the powder of black seed was delivered to a local Paratha Maker in Jeddah City. Each Paratha include 10 gram of powder of black seed (Figure 1).

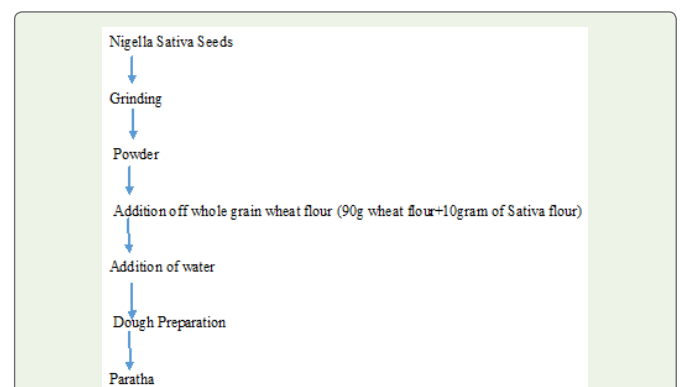


Figure 1: Preparation of Paratha.

Results and Discussion

Among the 10 patients with type-2 Diabetes who were included in this study. Postprandial glucose test of patients are summarized in Table 1. Number of men and women were 05 and 05, respectively. Glycated hemoglobin of patients is represented in Table 2. Studies carried out as before and after the intervention of the diet [10-14].

Conclusion

Nigella sativa can be used as add on drug therapy in patients with poor glycemic control. *Nigella sativa* is safe and effective remedy. It is observed that it has ability to reduce the PPBS and Hb1Ac. *N. Sativa* has the potential to be used as a natural adjuvant to oral glucose lowering drugs in the management of type 2 diabetes mellitus. As NS is a very low cost herb, therefore the potential cost benefit ratio will be in favor of benefit. Further clinical trials are recommended to move forward in this promising area of research.

Table 1: Postprandial glucose test (PPBS).

Patient	Parameter	Before Intervention	After Intervention
A1	PPBS	220.2683	218.6951
A2	PPBS	224.327	221.877
A3	PPBS	218.214	217.471
A4	PPBS	217.740	215.747
A5	PPBS	223.741	222.657
A6	PPBS	224.363	221.548
A7	PPBS	230.6520	228.254
A8	PPBS	217.3691	216.2587
A9	PPBS	219.257	218.638
A10	PPBS	214.4714	211.452

Table 2: Glycated hemoglobin (HbA1c).

Patient	Parameter	Before Intervention	After Intervention
A1	HbA1c	7.71	7.58
A2	HbA1c	7.67	7.62
A3	HbA1c	7.82	7.77
A4	HbA1c	7.69	7.42
A5	HbA1c	7.83	7.71
A6	HbA1c	7.59	7.50
A7	HbA1c	7.63	7.51
A8	HbA1c	7.88	7.72
A9	HbA1c	7.83	7.79
A10	HbA1c	7.69	7.60

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