



ORIGINAL ARTICLE

Effects of *Tinospora cordifolia* leaf Powder Supplementation on sugar level in non-diabetic obese women of Bhopal

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ABSTRACT

Obesity is a growing epidemic that affects women more often than men. In the present study non diabetic obese women with high blood sugar level was selected, it would be pre-diabetes condition. Many plants are claimed to possess antidiabetic and antioxidant activity. *Tinospora cordifolia* commonly known as Guduchi, is known to be very helpful in building up the immune system and the body confrontation against definite infecting organisms. In the present study, the effect of *Tinospora cordifolia* leaf powder on blood sugar level in obese and non diabetic female in the age group of 35-50 years was studied having high blood sugar level from the normal range. 2gm of *Tinospora cordifolia* leaf powder was given orally twice a day for 30 days. Fasting blood samples were investigated in respect of sugar in subjects before the start and at the end of the study. Initially the blood sugar level was high which decreased significantly in all the subjects only in 30 days of oral consumption of *Tinospora cordifolia* leaf powder.

Key words: Blood sugar, Oral administration, leaf powder, *Tinospora cordifolia*

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INTRODUCTION

Diabetes mellitus is a worldwide chronic disease of humans related with the elevated blood sugar level due to insulin deficiency. Diabetes is sometimes described as a "lifestyle disease" because it is more common in people who are over weight or obese. India is one of the major countries in terms of Diabetic patient [1]. The prevalence of diabetes is rapidly rising all over the globe at an alarming rate. Over the past 30 year, the status of diabetes has changed from being considered as a mild disorder of the elderly to one of the major causes of morbidity and mortality [2,3].

Many plants are claimed to possess antidiabetic and antioxidant activity [4]. *Tinospora cordifolia* is an important herb of tropical India in Ayurvedic system of medicines. It has been traditionally used for treatment of jaundice, chronic diarrhea, cancer, dermatological diseases, general debility, and asthma [5]. Sai and Srividhya [6] postulated insulin-like action of extracts of the *Tinospora cordifolia* leaf. They studied hypoglycaemic potential of leaves both in normal and diabetic rabbits. Previous studies suggest that oral administration of some herbal extracts reduce blood glucose concentrations in rats, possibly by interfering with food consumption and/or gastrointestinal absorption of food [7]. However the effect of *Tinospora cordifolia* on the blood sugar level have not been studied intensively on obese women prone for pre-diabetic condition, in which the blood glucose level is higher than normal but not high enough to be called diabetes, which forms the basis of the present study.

MATERIALS AND METHODS

For the present study, *Tinospora cordifolia* was grown in botanical garden of Career College, Bhopal. The leaf of fully grown plants was dried in sunlight, cleaned and sterilized with 70% alcohol and grinded in powdered form. The experimental subjects were observed for two parameter i.e blood sugar level and weight. Subjects were 10 diabetic and over weight female patients selected on the basis of weight and the blood profiling done for evaluation of blood sugar level and were given leaf powder of *Tinospora cordifolia* with drinking water by oral administration. All the subjects were given 2 gm of leaf powder of *Tinospora cordifolia* with water orally twice a day for 30days.

The blood glucose levels and body weight were estimated on starting day (1st day) before taking the 1st dose of leaf powder and 24 hours after the final day (30th day) of taking dose. Before the start and completion of study, blood samples were collected in clean and sterile tubes, then serum was separated by centrifugation and stored at -20°C till the biochemical analysis was performed. Fasting blood sugar level was determined in an auto analyzer using the glucose oxidase peroxidase method [8].

RESULT AND DISCUSSION

The result of experiments has been shown in Table-1, where obese women were treated with leaf powder of *Tinospora cordifolia* and their blood glucose levels and weight were determined and remarkable decrease in blood sugar level and weight was observed. Present study reports the effectiveness of *Tinospora cordifolia* in easy weight loss for obese women as well as it is also useful to maintain blood sugar level. It is clear from the values obtained after test that daily consumption of *Tinospora cordifolia* decreases the blood sugar level and body weight of obese women, which is in well agreement with earlier reports [1,9-11]. With present finding *Tinospora cordifolia* is suggested for the treatment of diabetes mellitus as it is easily available, herbal and non-hazardous natural remedies; however, an extensive clinical case control study is required to support the aspect.

Table 1: Weight, age and fasting blood sugar level of Experimental groups

S.No	Before Experiment Day 1			After Experiment Day 31		
	Age	Weight	Sugar Level (mg/dl)	Age	Weight	Sugar Level (mg/dl)
1	48	92	124	48	91	111
2	39	86	117	39	82	98
3	36	75	122	36	73	97
4	43	83	115	43	82	93
5	51	79	108	51	75	91
6	43	75	105	43	75	99
7	50	78	98	50	72	89
8	49	84	112	49	82	107
9	35	75	119	35	69	130
10	44	87	127	44	85	103

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