Title : **Effect of Cinnamon, Clove and Bay Leaf Powder on Type 2 Diabetes Mellitus Patients in the Age Group of 30-70 Years**

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Introduction:

Diabetes mellitus is a group of metabolic diseases characterised by hyperglycaemia resulting from defects in insulin secretion, insulin action or both. Several pathogenic processes are involved in the development of diabetes. These range from autoimmune destruction of the beta cells of pancreas with consequent insulin deficiency to abnormalities that result in resistance to insulin action [1] Type 2 diabetes is the common form of diabetes constituting 90% of the diabetic population. Increasing incidence in both experimental and clinical studies suggest that oxidative stress plays a major role in pathogenesis of diabetes mellitus. Abnormally high levels of free radicals cause development of insulin resistance thus causing diabetes mellitus. [2]. Functional foods like cinnamon, garlic, bitter gourd, onion, ginseng, fenugreek etc have been addressed for their specific action towards reducing the development of diabetes. [3]. **Objectives:** To evaluate the blood glucose level of type 2 diabetes patients before and after the consumption of mixture of clove, cinnamon and bay leaf powder (6gms)

- Design: A cross sectional study.
- Setting: Type 2 Diabetes Mellitus Patients from 2 clinics of Dr Ashish Sarwate (Mulund and Thane).

Methodology:

A total number of 100 patients having type 2 diabetes mellitus were selected randomly for the study in the age group of 30-70 years. They were divided into 2 groups -50 for experimental and 50 for control group. Anthropometric measurements (height, weight and BMI), Biochemical data (fasting and post prandial blood sugars and blood pressure), Medical and Family history and 7 day dietary recall of the selected subjects was taken. This was followed by a physical activity schedule for a period of 1 month. The experimental subjects were given powder of cinnamon, bay leaf and clove. The dosage selected for the study was 6gms given three times in a day. After 1 month there was a dropout rate where 31 control group subjects and 33 experimental group subjects were analysed. Blood glucose levels were again monitored. Also weight, BMI and blood pressure were measured of both control and experimental group.

Result:

Type 2 diabetes is the common form of diabetes constituting 90% of the diabetic population. In the study N= 100 patients were diabetic. There was a significant decrease of blood sugars in the experimental group after intervention where P=0.000 was seen in fasting blood glucose and P= 0.000 was seen in post prandial blood sugars. It was also observed that while comparing control group with experimental group after intervention there was a significant decrease in fasting blood sugar but there was no difference seen in post prandial blood sugar. The reason could be that the patients were treated by the diabetologist and were on their regular hypoglycaemic drugs. Additionally there was also an increased % of normal BMI in experimental group. There was no significant change found in control group post intervention. There was no change found while correlating blood glucose with BMI AND BP.

Conclusion:

Diabetes has become very common in India. There are studies which say that cinnamon, clove and bay leaf powder individually show effect on blood glucose levels. In the present study all the three ingredients were used together and given to patients. Thus it was seen that 6gms of cinnamon, clove and bay leaf powder can significantly decrease blood glucose (fasting and post prandial) parameters. There was also a significant % increase of normal BMI.

References:

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