



Title : Antidiabetic Activity of Lady Finger Fruit Extracts in STZ induced diabetic rats.

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Introduction:

Insulin deficiency in turn leads to chronic hyperglycaemia with impaired carbohydrate, fat and protein metabolism. Diabetes Mellitus has reached epidemic proportions and affects more than 170 million individuals worldwide. Lady finger (*Abelmoschus esculentus*), is widely cultivated throughout the tropical and warm temperate regions of the world including India. It is used as a vegetable in all varieties of food throughout India. This plant is a rich source of dietary fiber, vitamins A, C, K and folates. Other than its nutritional benefits, this plant is also known to possess medicinal properties such as antioxidant, anti inflammatory and anti depressant properties. The consumption of *Abelmoschus esculentus* as a mucilage has been reported to reduce serum cholesterol, triglyceride and blood pressure. The aim of this study is to evaluate various extracts of lady finger forevaluation of antidiabetic activity.

Methodology:

The plant was procured from the local market. Aqueous extract of fresh fruits, mucilaginous extract and aqueous extract of dry powder of Lady Finger were prepared. The antidiabetic activity was evaluated using Streptozotocin (STZ) induced rat diabetic model. The diabetes was induced by administration of STZ in dose of 60mg/kg in adult wistar male rats. Diabetic animals were selected depending on blood glucose levels exceeding 375 mg/dL and non-diabetic control groups were kept in the cages individually and separately. The animals were divided into 6 groups, containing 6 animals each. The groups were normal control, diabetic control (0.2% CMC), Group III (Dry powder extract of lady finger). Group IV (Aqueous extract of lady finger), Group V (Mucilage of lady finger), and Group VI (Glibenclamide). Extracts were given in two dose levels. All the extracts and standard were administered for 28 days, twice a day. Body weight and blood glucose levels were estimated on 0th, 7th, 14th, 21st and 28th day of the experiment. Histopathological studies of vital organs were carried out.

Results:

All the extracts were found to possess significant antidiabetic activity. There was significant reduction in blood glucose levels for rats treated with dry powder extract, aqueous extract and mucilage of lady finger. Dry powder extract was found to be the most effective in decreasing blood glucose levels. The blood cholesterol and triglyceride levels of diabetic rats increased significantly, whereas those of treated rats remained almost constant. The body weight of diabetic rats decreased, and there was no significant reduction in body weight of treated rats.

Conclusion:

Lady Finger fruits are part of normal vegetarian diet throughout the India. Hence their intake as well as formulations prepared from the bioactive extract/s can form an attractive alternative to synthetic antidiabetic drugs.

References:

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