

RESEARCH PAPER:

Antidiabetic effects of *Ficus racemosa* on blood glucose in alloxan induced diabetic rats

V. SIVAKUMARI

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Correspondence to :

V.SIVAKUMARI

Department of
Environmental and Herbal
Sciences, Tamil
University,
THANJAVUR (T.N.)
INDIA

SUMMARY

The study was carried out to demonstrate anti diabetic effect of *Ficus racemosa* roots extract in alloxan induced diabetic rats with normal and control rats. The blood glucose and urine sugar increased in diabetic animals as compared to control animals. The level of haemoglobin decreased whereas the level of glycosylated haemoglobin increased in diabetic animals as compared to control animals. The level of vitamin-E and C decreased in diabetic animals as compared to control animals. The result indicates the level of blood glucose and urine sugar decreased in diabetic rats compared to control animals.

Key words :

Diabetes mellitus,
Ficus racemosa,
Urine sugar and
Haemoglobin

Ficus racemosa (Family: Urticaceae) is a stringent, carminative, vermifuge and an anti-dysentery drug. It is a good remedy for excessive appetite. The extract of roots is used in diabetes. This is a herbal substance that has been reported to have hypoglycaemic activity (Murray and Lopez, 1997). Experimental studies have also reported beneficial effects of roots of *F. racemosa*. Thus, in the present study it has been investigated the anti-diabetic effect of *F. racemosa* in alloxan induced diabetic rats (Thylefors, 1990; Klein *et al.*, 1992).

Diabetes mellitus is a group of diseases characterized by high levels of blood glucose resulting from defects in insulin production, insulin action or both. Diabetes can be associated with serious complications and premature death, but people with diabetes can take steps to control the diseases and lower the risk complication (Cohen and Heikkila, 1974). Diabetes is currently growing at fast rate throughout the world and is the 16th leading cause of global mortality (Taylor and Agius, 1998) and half of world's blind population is due to diabetic cataract (Rajasekharan and Tuli, 1976).

MATERIALS AND METHODS

Ficus racemosa roots were collected, cleaned, dried and powered. Both aqueous and alcoholic extract were prepared. Diabetes mellitus was induced in wistar rats by single intraperitoneal injection of freshly prepared solution of alloxan monohydrate (150mg/kgbw)

in physiological saline after overnight fasting for 12 hrs (Gutteridge and Halliwell, 1990). A total of 14 numbers of rats were divided into 7 groups. Each and every groups containing 1 animal Group-1 animal served as control animal and did not receive any other treatment. Group-2 animals were provided single intraperitoneal injection of alloxan (150mg/kgwt) monohydrate after over night fast 12 hrs. Group-3 and 4 animals received aqueous and alcoholic extracts of *F. racemosa* after the diabetic state was assessed. Group-5 animals received glibenclamide (600/mg/kgbw) for 45 days. Group-6 was provided oral administration of aqueous and alcoholic extract of *F. racemosa* roots alone for 45 days. After the experimental period, all the animals were sacrificed by cervical dislocation and biochemical studies were analyzed.

RESULTS AND DISCUSSION

Diabetes mellitus, a worldwide leading metabolic syndrome, is characterized by hyperglycemia associated with alteration in carbohydrate and lipid metabolism. Diabetes mellitus is basically a disease of glucose metabolism, resulting from dysfunction of pancreatic β -cells and insulin resistance, but at later stages of the disease the lipid metabolism is also affected (Nadeem and Suraiya, 1969).

In the present study, observed an increase in blood glucose, glycosylated Hb, and reduction in total blood Hb in alloxan induced diabetic rats. The blood glucose and urine sugar

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