RESEARCH PAPER:

Anti diabetic effects of *Ficus racemosa* on lipid profile in alloxan induced diabetic rats

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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 level of lipid (total cholesterol, triglyceardies, phospholipids and free fattyacids) significantly increased in diabetic rats as compared to control animals. The level of LDL and VLDL cholesterol significantly increased where as HDL- cholesterol level decreased in diabetic rats as compared to control animals. The results clearly indicate that aqueous and alcoholic extracts of *F. racemosa* roots at a dose of 400mg/kg/bw have shown anti hyperlipidimic in alloxan induced diabetic rats.

Key words :
Diabetes mellitus, *Ficus racemosa*, Cholestrol, Phospholipids

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Ficus racemosa is a medium tall tree with quite rich green foliage that provides good shade. It is popularly known as "Country fig" in English and "Atti" in Tamil. The leaves, bark and fruits of *F. racemosa* are employed in native medicine to treat several diseases (Joshi, 2000; Li *et al*., 2004). Experimental studies have demonstrated its anti-inflammatory, hepatoprotective and hypoglycemic effects (Mandal *et al*., 1999; Bhaskara Rao *et al*., 2002). However, there were no reports on antihyperlipidemic effect of *F. racemosa* root in alloxan-induced diabetic rats. In view of the above, it seems necessary to investigate the hypolipidemic activities of aqueous and ethanolic extract of *F. racemosa* root in alloxan-induced diabetic rats.

MATERIALS AND METHODS

Ficus racemosa roots were collected, cleaned, dried and powered. Both aqueous and alcoholic extracts were prepared. Diabetes mellitus was induced in wistar rats by single intraperitoneal injection of freshly prepared solution of alloxan monohydrate (150mg/kgbw) an in physiological saline after overnight fasting for 12 hrs (Gutteridge and Halliwell, 1990). A total of 35 numbers of rats were divided into 7 group and every group 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) mono hydrate 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 extracts of *F. racemosa* roots alone for 45 days. After the experimental period, all animals were sacrificed by cervical dislocation and biochemical studies were analyzed.

RESULTS AND DISCUSSION

The level of lipid (total cholesterol, triglyceardies, phospholipids and free fattyacids) were significantly increased in diabetic rats as compared to control animals. However, oral administration of aqueous and alcoholic extract of *F. racemosa* roots revert back the lipid profile values to near normal concentration in diabetic rats. No statistical significance was observed between control groups and rats treated with alcoholic and aqueous extracts of *F. racemosa* alone (Table 1).

The level of LDL and VLDL cholesterol significantly increased where as HDL-cholesterol level decreased in diabetic rats as compared to control animals. However, oral administration of aqueous and alcoholic extracts of *F. racemosa* roots revert back the lipoprotein values to near normal concentration in diabetic rats. No statistical significance was observed between control groups and rats