



Aims &
Objectives

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The present study was designed, to explore the hypoglycemic, antioxidant and lipid lowering activities in few medicinal plants on diabetic models.

In India people from all socio-economic strata are suffering from dyslipoproteinemia due to diabetes mellitus. Recently there has been a growing demand for newer, safer and less toxic antidyslipoproteinemic agents for the treatment of diabetic dyslipoproteinemia, as the adverse effects of glibenclamide and other lipid lowering drugs are quite well known and reported.

Natural products are the best option to treatment of diabetic dyslipoproteinemia. Accordingly we have selected four medicinal plants *A. indicus*, *H. rosa sinensis*, *C. tora* and *T. cordifolia* which are known to possess potent biological activities, but hypoglycemic, lipid lowering and antioxidant activities are not well studied.

In view of the above considerations, the present study was planned to investigate the status of various biochemical parameters in different animal models of dyslipoproteinemia (alloxan, triton and HFD models) following the treatment with various herbal hypolipidemic agents.

Following parameters were studied in above animal models:

- A. Blood glucose (BLG), Total cholesterol (TC), Phospholipid (PL), Triglyceride (TG) and Protein.
- B. Serum lipoprotein profile.
 - (i) Polyanionic precipitation of β -lipoprotein (VLDL+LDL) and α -lipoprotein (HDL) in serum to assess the following components:
Total cholesterol

Triglyceride

Phospholipid

Apolipoprotein

- C. Evaluation of antioxidant status: The activities of the antioxidant enzyme Superoxide dismutase (SOD), Catalase (CAT) and Lipid peroxide (LPO) in different diabetic models.
- D. In vitro evaluation of antioxidant activity of *A. indicus* root extract.
- E. For evaluation of activities of lipases following parameters were studied: Free Fatty Acids (FFA) in serum, Triglyceride lipase (TGL) and Lipoprotein lipase (LPL) activities in liver homogenate and Post Heparin Lipolytic Activity (PHLA) in plasma.
- F. To evaluate the hypoglycemic activity of *T. cordifolia* in human volunteers by studying following parameters in serum.
BLG, TC, TG, Very Low Density Lipoprotein–Total Cholesterol (VLDL-TC), Low Density Lipoprotein–Total Cholesterol (LDL-TC), High Density Lipoprotein–Total Cholesterol (HDL-TC) and lipid peroxide (LPO).
- G. Evaluation of effect of natural products on hepato specific parameters in serum of rats viz., Bilirubin (Bil.), Glutamate Pyruvate Transminase (GPT), Glutamate Oxaloacetate Transminase (GOT) and Alkaline phosphatase (ALP).