Pharmacognosy-2013
International Conference and Exhibition on
Pharmacognosy, Phytochemistry & Natural Products
October 21-23, 2013 Radisson Blu Plaza Hotel, Hyderabad, India

A comparative study on the anti-diabetic activity of methanolic extracts of selected medicinal plants available in India

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Abstract

India has a rich history of using various potent herbs and herbal components for treating diabetes. *Diabetes mellitus* is a chronic metabolic disorder characterized by derangement in carbohydrate, fat and protein metabolism due to absolute or relative deficiency of insulin secretion.The tribal and rural population of India are highly dependent on the medicinal plant therapy for meeting their health care needs. Three Indian medicinal plants Viz *Schrebera swietenoides*,*Barleria montana* and *Rotula aquatica* were selected for their evaluation of antidiabetic activity against streptozotocin induced diabetic model in rats. The mean blood glucose levels and percent decrease in blood glucose levels of the above methanolic plant extracts were determined for different dose levels of 200 and 400 mg/kg b.w at various time intervals (0, 2, 4, 8, 12, 18 and 24 hrs) and compared with standard, Glibenclamide. The maximum percent reduction in blood glucose levels was observed at 12^{th} and 8^{th} hr after oral administration of the 200 and 400 mg/kg b. w of methanolic extract of *Schrebera swietenoides* roots. The oral administration of 400 mg/kg b. w of methanolic extract of *Barleria montana* aerial parts produced highly significant ($P<0.01$) decrease in blood glucose level at 4 and 8^{th} hrs. The percent reduction in blood glucose level shown by *Rotula aquatica* was promising and statistically significant from 2^{nd} hr onwards indicating that the extract is fast acting. Hence it was concluded that among the three plants tested the roots of *Rotula aquatica* have been useful in the treatment of diabetes

Biography

Dr T Shyam got awarded with doctorate from Andhra University and published more than 25 papers in reputed journals and has been serving as a reviewer of repute. He got good percentile in GATE-1999.He has been excellent in doing research with analytical techniques.