Effect of Sida alnifolia on glucose tolerance in diabetic rats: A comparison against an antidiabetic drug glibenclamide

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DIABETES

PP-1: Effect of *Sida alnifolia* on glucose tolerance in diabetic rats: a comparison against an antidiabetic drug glibenclamide

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Introduction: Diabetes Mellitus, since long has been treated with plant derived medicines. The search for more effective and safer hypoglycaemic agents from medicinal plants has continued to be an area of interest. The hypoglycaemic activity of *Sida alnifolia* (Sinh. Heen babila Family: Malvaceae) has been documented by Ayurvedic practitioners. Hence, the present study was aimed towards the comparative screening of aqueous extract of the aerial part of *Sida alnifolia* on glucose tolerance in alloxan induced diabetic rats with a standard drug ; glibenclamide. The efficacy of selected extracts on glucose tolerance in healthy rats was proven previously.
Methodology: The effect of hot water extract of the aerial part of *Sida alnifolia* on oral glucose tolerance test (OGTT) was evaluated. A single dose of extract at a range of 0.25 g kg^{-1}-2.00 g kg^{-1}doses was administered orally to alloxan induced (150 mg kg^{-1}bw, ip) Wistar rats (n=6). Glibenclamide was used as the standard drug (0.50 mg kg^{-1}). The acute effect was evaluated over a four hour period.
Results: A statistically significant improvement in glucose tolerance with the extract was found at and above the dose of 0.75 g kg^{-1} in diabetic rats with no improvement at doses of 0.25, 0.50 g kg^{-1} ($p<0.05$). The maximum improvement in glucose tolerance at the dose of 1.00g $kg^{-1}$was 21% compared to glibenclamide treated rats (60%),
Conclusion: The aqueous extract of the aerial part of *Sida alnifolia* possessed significant hypoglycaemic activity. However the effect was not comparable to the antidiabetic drug glibenclamide.

PP-2: Inventory of antidiabetic plants in selected regions of Seshachalam Hills of Andhra Pradesh

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Tirumala region (part of seshachalam Hills of Andhra Pradesh) is characterized by a rich floral diversity and equally rich ethno medicinal tradition. Herbal medicine is the dominant system of medicine practiced by the local tribes of this region for the treatment of diabetes. The present study was designed to evaluate the hypoglycemic and hypolipidemic activities of ethanolic leaf extracts of *Syzygium alternifolum* and *Syzygium cumini* in STZ induced diabetic rats. Blood glucose, lipid levels were estimated using commercial kits available in the market. The Ethanolic extracts of *Syzygium alternifolum* and *Syzygium cumini* were administered for 21 days to normal and STZ induced diabetes rats at the dose of 400 mg/kg body weight. The extracts produced significant reduction ($p<0.005$) in bold glucose. It also produced beneficial effects in the lipid profile in normal as well as STZ induced diabetic rats. The ethnolic extract of Syzygium *alternifolum* showed a better results than *Syzygium cumini.*