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Hypoglycemic, hypolipidemic and histological effects of ethylacetate extract of *Combretum platypterum* leaves in alloxan induced rats

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Statement of the Problem: Plants with medicinal properties are rich in phytochemical compounds. Some botanical polysaccharides have important bioactive components responsible for hypoglycemic effect, while some plants are known to have hypolipidemic activity. The purpose of this study is to determine the hypoglycemic, hypolipidemic and histological effects of ethylacetate extract of *Combretum platypterum* leaves in alloxan induced rats.

Methodology & Theoretical Orientation: Sequential extraction was carried out on the plant leaves using n-Hexane, ethylacetate and methanol. These were concentrated to constant weights. Phytochemical screening was carried out on the crude sample of *Combretum platypterum* leaves. Diabetes was induced in the albino rats by the administration of alloxan monohydrate (150 mg/kg i.p.). The ethylacetate extract of *Combretum platypterum* at different doses of body weight were administered orally at a single dose per day to the diabetic induced rats for a period of 13 days. The effects of the ethylacetate extract of *Combretum platypterum* leaves and glibenclamide on blood glucose, plasma lipid and blood chemical parameters were measured in the diabetic rats. Histological effect of the ethylacetate extract of *Combretum platypterum* leaves was also carried on the liver, spleen, kidney and heart of the diabetic rats.

Findings: Phytochemical screening showed the presence of flavonoids, saponins, cardiac glycosides, cyanogenetic glycosides, tannins and alkaloids, while anthraquinones were absent. Hypoglycemic effect of the ethylacetate extract of *C. platypterum* showed a significant positive effect. Administration of glibenclamide and the ethylacetate extract of *C. platypterum* showed significant hypolipidemic effect when compared with the reference range. This also caused reduction in total triglyceride and total cholesterol levels. Histological result showed that *C. platypterum* has no toxic effect on the organs.

Conclusion & Significance: The ethylacetate extract of *C. platypterum* showed both hypoglycemic and hypolipidemic activities. *Combretum platypterum* has a great potential with activities to lead to desired drug design.

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