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Glycaemic Control by the Aqueous Bark Extract of *Spondias Pinnata* against Alloxan Induced Diabetes Mellitus

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Abstract

Introduction

Medicinal plant extracts have been used as a popular medicine for the treatment of Diabetes Mellitus since ages. The increasing trends in the use of plants as medicines globally, necessitate scientific investigations on novel antihyperglycaemic agents from medicinal plant extracts. The single administration of aqueous bark extract of *Spondias pinnata* (SPAq, Sinh. Emberella) showed remarkable efficacy in diabetic rats. Thus the present study aims at investigating the effect of repeated administration of SPAq on glycaemic control in normal and alloxan induced diabetic rats.

Methodology

Wistar rats were divided into five groups (n=6). Group 1 and 2 served as untreated normoglycaemic and alloxan induced diabetic rats (150 mg kg⁻¹ i.p.). Group 3 and 4 diabetic rats treated with the SPAq (1g kg⁻¹) and Glibenclamide (0.5mg kg⁻¹) for 30 days respectively. Group 5, normoglycaemic rats treated with the same dose of SPAq. At weekly intervals, oral glucose tolerance test was performed and body weights of animals were recorded. Glycosylated haemoglobin percentage (%HbA_{1c}) was estimated on the 30th day.

Results

The SPAq and Glibenclamide improved glucose tolerance by 41% and 53% (p=0.007) respectively in diabetic rats. The SPAq and glibenclamide reduced HbA_{1c} to 6.85±0.02% and 6.31±0.04% respectively (p=0.001). The decrease in HbA_{1c} in SPAq treated normoglycaemic rats was found to be statistically non significant (p<0.05). In contrast the administration of SPAq to diabetic rats restored the bodyweights of animals compared to diabetic untreated rats.

Conclusion

The aqueous extract of *Spondias pinnata* improved the glycaemic control in alloxan induced diabetic rats.

Keywords: *Spondias pinnata*, glycaemic control, diabetic rats