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Hypoglycemic Medicinal Effects of Cynodon Dactylon in Alloxan Induced Diabetic Albino Albino Rats

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Abstract

From time immemorial medicinal potential of *Cynodon dactylon* is known. In present study an effort has been made to assess the hypoglycemic activity of *Cynodon dactylon* in alloxan induced experimental animal model. A marked rise in fasting blood glucose level was observed in diabetic control rats when compared to normal control rats. Anti- hyperglycemic activity observed in *Cynodon dactylon* grass (2-4g/day) fed rats on 1st, 10th, 20th and 30th days post treatment.Anti-hyperglycemic activity of *Cynodon dactylon* grass treatment group was found less effective than that of insulin treatment group.It is hope that present study will be helpful in establishing a scientific basis for therapeutic uses of grass, *Cynodon dactylon*.

Keywords: Blood glucose; *Cynodon dactylon*; Diabetes

Introduction

Diabetes Mellitus is a major endocrine problems characterized by hyperglycemia resulting from defect in insulin secretion action or, both. Long time exposures of diabetes it silently kill the organs of body especially eye, kidney, nerve, heart, blood, vessels **(1)**. From time immemorial , therapeutic potential of *Cynodon dactylon* is known in religious book of India .It has been a matter of concern from time immemorial several plant extracts are known for their anti – diabetic properties and are being used for the traditional treatment of diabetes due to low cost , easily avaibility & lesser side effects **(2)**. *Cynodon dactylon* a member of poaceae family also called vilfa – stellata, Burmuda grass or Dhoob or durva.

Methods

- *Cynodon dactylon* grass was collected from rural area of darbhanga, India.
- Albino rats (150- 160 g) were used as experimental animals. All animals were procured from Local supplier. The rat was acclimatized for 10 days. All animlas were fed with Rodent pellet diet. Water was allowed to ad- libitum under strict hygienic condition.
- Induction of diabetes – fasting blood glucose was determined after depriving food for 14 hrs. Diabetes was induced by single intraperitoneal injection of 125 mg/kg of alloxan monohydrate sterile Saline.

- Alloxan is toxic glucose analogue which selectively destroys insulin producing cells in pancreas, this causes type –I diabetes. (Insulin dependent diabetes Mellitus IDDM)" called Alloxan diabetes **(3)**

Experimental Design

Group –A - Normal Rats
Group –B – Diabetic Control
Group –C – Insulin Treatment group
Group – D – *Cynodon dactylon* Grass- treatment group.

12 hours of Alloxan – injection the diabetic rats (glucose level < 285 mg/dl) were separated, treatment was started except normal rats & diabetic control rats. During experimental period, animal in all groups were given to standard water and pellet diet. Blood glucose level was monitored by glucometer.

	Fasting blood glucose Level (mg/dl)			
	1st day	**10th day**	**20th day**	**30th day**
Group -A	90.90.±	88.39. ±3.16	90.80±1.33	93.5±1.91
Normal Control	1.52			
Group –B	294±1.77	293±1.41	295.5±1.40	296±4.65
Diabetic control				
Group- C	184± 6.56	165±5.30 P< 0.05	138.33±5.14 P< 0.05	130±2.39 P< 0.05
Insulin treatment group				
Group – D **Grass Treatment group**	278 ±2.34	157±5.30 P<0.05	140.33±5.14 P<0.05	132±2.36 P<0.05
Value are Mean ± S.E.M; n=6, P<0.05 V_s diabetic control.				

Table 1: Effects of *Cynodon dactylon* grass in Alloxan induced diabetic rats.

Results and Discussion

A marked rise in fasting blood glucose level was observed in diabetic control rats when compared to normal rats. Anti diabetic activity was observed in grass fed rats on 1st, 10th, 20th & 30th days post treatment.

However, Antidiabatic effects of grass fed rats was found less effective than that of insulin treatment group. Earlier reports on extracts of *Cynodon dactylon* also reveal antidiabetic effect in diabetic model (**4, 5**). The present investigation will be helpful in establishing a scientific basis for therapeutic uses of *Cynodon dactylon* in diabetes.

However, Phytochemical Screening of this plant is required to explore other potential and gain better understanding of the mechanism of its therapeutic actions.

Conclusion

This research appears that *Cynodon dactylon* grass works as an anti- diabetic agent so this plant grass will be helpful in treating diabetes patient in rural India due to low cost easily availability and lesser side effects associated with the use of this plant grass.

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