



Gymnema sylvestre leaves methanolic extract possesses promising potential against streptozotocin- induced diabetic-cardiomyopathy in Wistar rats

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Abstract:

The objective of present study was to explore the therapeutic potential of *Gymnema sylvestre*, an indigenous medicinal plant, against streptozotocin-induced diabetes and diabetic-cardiomyopathy in male Wistar rats. Thirty male Wistar rats (180-200 g) were divided into five groups of six animals each. Four groups of rats (group II-V) were offered high fat diet for one month to obtain the obese rats while rats of group I (Healthy Control) were given normal feed. Diabetes was experimentally induced in rats of groups III-V by intraperitoneally administering a single dose of streptozotocin (35 mg/kg). Rats of group IV and V were orally treated with metformin and test extract @ 50 and 400 mg/kg body weight daily for 60 days while rats of groups I, II and III served as healthy control, obese control and obese diabetic, respectively. Increased fasting blood glucose level, percent HbA1c, CK-MB, cardiac troponin-I and dyslipidemia in diabetic rats were significantly reduced in test extract-treated group compared to the obese-diabetic group and the values of all these parameters were almost comparable to those in metformin-treated group. Significant increase in mean arterial pressure and altered ECG indices (QRS interval, R-amplitude and ST-height) in test extract group were also significantly restored towards the values in healthy control group. Significant increase in expression of the cardiac tissue glucose transporter-4 (GLUT-4) was also observed in test extract treated group revealing the protective effect of test extract against hyperglycemia-induced cardiac injury. Thus, it can be concluded that, *Gymnema sylvestre* possesses promising potential for its use in treatment of diabetes and diabetes-induced cardiomyopathy



Biography:

Dr. Atul Prakash is Assistant Professor in Department of Veterinary Pharmacology and Toxicology, College of Veterinary Science and Animal Husbandry, U.P. Pt. Deen Dayal Upadhyay Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go-Anusandhan Sansthan (DUVASU), Mathura-281001 Uttar Pradesh, India. He has completed his PhD at the age of 29 years from Indian Veterinary Research Institute, Izatnagar, Bareilly, India. He has more than fifteen years of research experience and published more than 35 research papers in reputed journals.

Recent Publications:

1. Prakash Atul, et al J Trace Elem Med Biol 2020.
2. Prakash Atul, et al BMC Pharmacol Toxicol 2020.
3. Prakash Atul, et al Biol Trace Elem Res 2019.
4. Prakash Atul, et al Vet World 2018.

Webinar on Toxicology | October 30, 2020

Citation: Prakash Atul; *Gymnema sylvestre* leaves methanolic extract possesses promising potential against streptozotocin- induced diabetic-cardiomyopathy in Wistar rats; Webinar on Toxicology; October 30, 2020