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## Allantoin ameliorates bio-chemical, behavioral and electrophysiological deficit in streptozotocin (STZ) induced peripheral neuropathy in diabetic rat

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The study was conducted to investigate the neuro-protective potential of allantoin against bio-chemical, behavioral and electrophysiological deficit in streptozotocin (STZ) induced peripheral neuropathy in diabetic rat. Oral administration of allantoin (100 & 200 mg/kg; per oral) began on the confirmation of diabetes after 72 hours of STZ treatment and was continued for 8 weeks in Wistar albino rats. Determination of body weight and behavioral tests were performed subsequently in every two week during allantoin treatment period. In addition sciatic nerve conduction velocity studies and biochemical parameters of nerve homogenate and serum were performed. *In vitro* antioxidant activity and AGE (advanced glycation end product) inhibitory assay of allantoin were also performed. Animals treated with allantoin showed a significant improvement in body weight and reduction in serum blood glucose levels as compared to vehicle-treated diabetic rats. Moreover, significant improvement was noted in hyperalgesia, grip strength muscle co-ordination and nerve conduction velocity in allantoin treated diabetic rats. In sciatic nerve there was a significant increase in MDA level and poor antioxidant levels were observed. Reduction in MDA level and NO was determined nevertheless increase in the antioxidant level was perceived in allantoin treated group. Allantoin treatment shows efficacy for preventing diabetic deterioration as seen by improvement in biochemical, behavioral and electrophysiological deficit. The neuro-protective effect of allantoin could be attributed to its anti-hyperglycemic, AGE inhibitory activity and reduction in oxidative and nitrosative stress.

### Biography

Naini Bhadri is pursuing her PhD in Pharmacology from Rajiv Gandhi University of Health Sciences, Bengaluru (Karnataka). She is a Senior Research Fellow of Indian Council of Medical Research, New Delhi. She has presented research posters in many national and international conferences.

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