

## Supplementation of Corosolic Acid Prevents the Development of Neuropathic Pain in Streptozotocin Induced Diabetic Rats

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**Abstract :** The present study was designed to screen the neuroprotective and antioxidant activity of corosolic acid in painful diabetic neuropathy (DN). Diabetes was induced in rats by single dose of STZ (60mg/kg, i.p). Diabetic rats were tested every week for the development of pain, at 5th week rats showed sensation of pain. At 6th week the rats developed significant neuropathic pain. They were divided into different groups and treated with Corosolic acid (2 and 4 mg/kg, p.o) for further two weeks. Pain was assessed in the diabetic rats by mechano-tactil allodynia, mechanical hyperalgesia and cold allodynia. At the end of treatment period rats were scarified and biochemical changes such as plasma glucose level, endogenous antioxidants (Lipid peroxidation, reduced glutathione, superoxide dismutase and catalase) in sciatic nerve were evaluated. Further Na<sup>+</sup>/K<sup>+</sup> ATPase and nitric oxide content was also evaluated. Treatment with corosolic acid for two weeks restored the altered body weight and elevated blood sugar level. Further corosolic acid showed dose dependent reduction in pain in neuropathic animals. The level of endogenous antioxidants enzymes, Na<sup>+</sup>/K<sup>+</sup> ATPase and nitric oxide were significantly prevented. In conclusion, the result of the present study suggests the antidiabetic, antioxidant and neuroprotective property of corosolic acid in diabetic rats with neuropathic pain.

**Keywords :** neuropathic pain, diabetes, corosolic acid, antioxidant

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