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Effects of Acute Grayanotoxin-I Administration on Hepatic and Renal Functions in Rats

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Abstract: The effects of acute Grayanotoxin-I (GTX-I) administration on hepatic and renal functions in rats were investigated. GTX-I was administrated to the animals of groups 1, 2 and 3 at a single i.p. dose of 1 mg/kg, 0.5 mg/kg and 0.25 mg/kg respectively, and group 4 (control) received i.p. saline (0.9 %) solution only. One hour following the administration of GTX-I or saline, urine analysis (leukocytes, urobilinogen, protein, pH, blood, ketone, glucose, nitrites) was performed and serum was evaluated for activities of glutamic pyruvic transaminase (GPT), γ -glutamyl transferase (γ -GT) and isoenzymes of lactate dehydrogenase (LDH) (as a percentage of total LDH activity), transferrin, ceruloplasmin and total protein concentrations and histopathologic changes in the liver and kidney. A single dose of GTX-I produced proteinuria and hematuria and decreased GPT, LDH 3 , LDH 4 , and γ -GT. But the loss of GPT, LDH 3 and LDH4 partially disguised by hepatic enzyme leakage which was the result of hepatic damage occured with increasing doses of GTX-I. Hepatic damage was also detected by light microscopy.

Key Words: Grayanotokxin, glutamic pyruvic transaminase (GPT), γ -glutamyl transferase (γ -GT), lactate deyhdrgenase (LDH)3 serum total protein.

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