LS-11-P-5936 Protective Effects of Resveratrol in Cisplatin Induced Testis Damage in Rats

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Introduction: Cisplatin is commonly used as a chemotheropotic agent however it is associated with numerous side effects such as reproductive cytotoxicity. It causes spermatogenic cell death and DNA damage in spermatozoa via the formation of reactive oxygen species (ROS). Resveratrol (3,5,4'-trans-trihydroxystilbene), a natural phytoalexin, is a potent antioxidant agent, presents in a wide variety of dietary sources including grapes, plums and peanuts.

Aim: The aim of the study is to investigate possible protective effects of resveratrol in cisplatin induced testis damage.

Materials and Methods: Male Sprague Dawley rats were used in the study and four experimental groups (250-300 g; n = 7/each group) were formed as: 1- saline applied control, 2- resveratrol applied control, 3- cisplatin and 4- cisplatin + resveratrol groups. Following a single dose of cisplatin (7 mg/kg i.p.), either saline or resveratrol (10 mg/kg, orally) was administered for 5 days. After decapitation of rats, testes were removed for histopathological and biochemical evaluation. The testis tissue samples were fixed with 10% neutral buffered formaldehyde and processed for routine paraffin embedding. Hematoxylin and Eosin stained sections were evaluated semiquantitatively as atrophic, degenerative, regressive or normal seminiferous tubules. Oxidative injury was examined by measuring malondialdehyde (MDA) and glutathione (GSH) levels and myeloperoxidase (MPO) activity. Data were analyzed statistically.

Results: Degenerated and atrophic tubule numbers were increased in cisplatin induced rats and resveratrol treatment decreased the degenerated and atrophic tubules significantly. In cisplatin treated group, increase in MDA level and MPO activity and decrease in GSH level were also reversed by resveratrol treatment.

Conclusion: Resveratrol is protective against cisplatin induced testis injury in rat and may be a promising agent in alleviating the systemic side effects of cisplatin.

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