

The effects of humic acid on cisplatin-induced nephrotoxicity in rats**Ender TEKES, Coşkun SILAN**

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Objectives: Oxidative stress induced damage plays a role in cisplatin induced nephrotoxicity in rats. It is aimed to evaluate whether the nephrotoxicity developed by cisplatin can be prevented by the administration of humic acid(HA), whose antioxidant properties are known. In addition, if there is a protective effect, it is aimed to illuminate the possible mechanisms of the related effect.

Materials-Methods: Male Wistar rats(200-300g) were used in our study(n=42). Animals were divided into 6 groups with 7 animals in each group: Control;HA40mg/kg;Cisplatin 10mg/kg;Cisplatin+HA10mg/kg;Cisplatin+HA20mg/kg; Cisplatin+HA40mg/kg. In this study, drug administrations were as intraperitoneal administration once a day and the total duration of treatment was 7days. Anesthesia was achieved by administering xylazine 5mg/kg and ketamine 50mg/kg 5days after a single dose of cisplatin was administered, and 7days after the start of treatment in the other groups; and cardiac blood and kidneys were collected for examination. Urea and creatinine in plasma; TNF-alpha,IL-10,NF-kappaB,Caspase3,TAS,TOS levels in kidney tissues were evaluated.

Results: Plasma urea and creatinine levels were significantly increased with cisplatin administration compared to the control group. However, there was no change in that increase with HA application. TNF-alpha,IL-10,NF-kappaB levels in kidney tissue were significantly increased with cisplatin administration. While there was no change in the HA10mg and 20mg groups, there was a significant decrease in TNF-alpha,IL-10,NF-kappaB levels in the HA40mg group. In addition, TOS levels, which is an oxidative stress parameter, were significantly increased with cisplatin administration compared to the control group, while a significant decrease was observed in those administered 40mg of HA.

Conclusions: HA10 and 20mg/kg/day doses did not show any effect on the improvement of kidney damage induced by cisplatin, while HA40mg/kg/day dose was found to provide significant improvement in some biochemical parameters. It is thought that HA might be beneficial in the prevention of cisplatin-induced kidney damage..

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