

## Investigation on the Role of L-Norvaline in Cisplatin-induced Renal and Hepatic Dysfunction in Rats

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**SUMMARY.** Cisplatin is antineoplastic drug associated with hepatotoxicity and nephrotoxicity due to oxidative stress. The aim of this work was to investigate the possible protective effects of L-norvaline on hepatotoxicity and nephrotoxicity caused by cisplatin drug in rats. Forty male albino rats were randomly divided into four groups: group I (control group): was maintained throughout the experiment without any treatment. Group II (L-norvaline group) that received L-norvaline daily in a dose of 25 mg/kg intraperitoneally for 21 days. Group III (cisplatin group) that received single intraperitoneal injection of cisplatin in a dose of 7.5 mg/kg at the 16th day of the experiment. Group IV (protected group) that received L-norvaline in a dose of 25 mg/kg intraperitoneally for 21 days and cisplatin at 16<sup>th</sup> day of the experiment. The animals were sacrificed and their body weights (liver, body) were estimated, biochemical parameters and histochemical study were also done. The results showed significant protection in liver and renal toxicity induced by cisplatin and histological structure. It is concluded that L-norvaline have protective effect against cisplatin induced side effects in rats.

**RESUMEN.** El cisplatino es un fármaco antineoplásico asociado con hepatotoxicidad y nefrotoxicidad por estrés oxidativo. El objetivo de este trabajo fue investigar los posibles efectos protectores de la L-norvalina sobre la hepatotoxicidad y la nefrotoxicidad causadas por el fármaco cisplatino en ratas. Cuarenta ratas albinas macho se dividieron aleatoriamente en cuatro grupos: grupo I (grupo control): se mantuvo durante todo el experimento sin ningún tratamiento. Grupo II (grupo L-norvalina) que recibió L-norvalina diariamente en una dosis de 25 mg/kg por vía intraperitoneal durante 21 días. Grupo III (grupo cisplatino) que recibió inyección intraperitoneal única de cisplatino en dosis de 7,5 mg/kg el día 16 del experimento. Grupo IV (grupo protegido) que recibió L-norvalina en dosis de 25 mg/kg por vía intraperitoneal durante 21 días y cisplatino a los 16 días del experimento. Los animales fueron sacrificados y se estimaron sus pesos corporales (hígado, cuerpo), además se realizaron parámetros bioquímicos y estudio histoquímico. Los resultados mostraron una protección significativa en la toxicidad hepática y renal inducida por el cisplatino y la estructura histológica. Se concluye que la L-norvalina tiene un efecto protector contra los efectos secundarios inducidos por el cisplatino en ratas.

**KEY WORDS:** cisplatin, liver toxicity, L-norvaline.

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