

عنوان مقاله:

The Histopathological Evaluation of the Effects of Capparis spinosa Seed Hydroalcoholic Extract on Cisplatin-induced-Nephrotoxicity in Rats

محل انتشار:

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خلاصه مقاله:

Background and Objective: Increment in cancer prevalence and subsequent need for chemotherapy leads to distinct kidney-related diseases such as acute kidney injury (AKI). Cisplatin is a common chemotherapeutic agent that has been used in many cancers; however, it can damage renal cells. Capparis spinosa is an important therapeutic plant in Persian medicine that encompasses high amounts of bioactive antioxidant components. The current study aimed to evaluate the nephroprotective effects of Capparis spinosa seed hydroalcoholic extract (CSSE) against cisplatin-induced nephrotoxicity in vivo through histopathological evaluation. Materials and Methods: Forty Sprague Dawley rats weighing within the range of 230 ± 20 gr were randomly divided into eight groups including sham, a single-dose cisplatin intraperitoneally (IP) injected group (7 mg/kg), toxic dose CSSE (200 mg/kg) group, and groups with cisplatin 7mg/kg IP and different doses of CSSE. Histopathological changes in the kidney tissues were quantified by the image-J program and analyzed by statistical methods. Results: Cisplatin-induced glomerular and tubular injuries in the kidney tissue. A single-dose cisplatin decreased the glomerular area and Bowman's capsule area, increased Bowman's space, and induced tubular loss of brush borders, tubular dilatation, tubular cast formation and tubular necrosis. All of the changes were reversed by CSSE significantly. Conclusion: Post-CSSE (50 and 100 mg/kg) treatment could protect against cisplatin-induced nephrotoxicity in vivo. More clinical studies are needed to confirm its protective effects on the prevention of kidney injury in chemotherapy receiving patients.

کلمات کلیدی:

Capparis spinosa, Persian Medicine, Pathology, Acute kidney injury, Cisplatin. Cancer

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