

Curative effects of vitamin against cisplatin induced nephrotoxicity in male albino rats

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Abstract

Cisplatin (CP) is generally used as a chemotherapeutic agent due to its therapeutic effects against cancer. Vitexin (VIT) is an apigenin flavone having pharmacological effects along with its antioxidant, anti-cancer, anti-inflammatory and neuroprotective activities which is a dynamic component of many traditional medicines around the Asian regions. The current study was designed to assess the curative potential of VIT on CP induced nephrotoxicity in male albino rats. Four experimental groups of 24 male albino rats were formed and treated as group I (Control), group II (Cisplatin; 10mg/kg injection at the first day of trial), group III (CP; 10 mg/kg+VIT; 10mg/kg) and group IV (VIT; 10mg/kg orally till the end of trial) for 30 days. Activity of catalase (CAT), superoxide dismutase (SOD), peroxidase (POD), glutathione (GSH), glutathione reductase (GSR), glutathione S-transferase (GST), level of lipid peroxidation (TBARS) level of hydrogen peroxide (H₂O₂), urine and serum profiles, comet parameters and histology were observed in this study. CP treated rats showed considerably ($p < 0.05$) reduced antioxidant enzyme activity, creatinine clearance, albumin and a considerable ($p < 0.05$) increase in the level of H₂O₂, TBARS, urea, creatinine, urobilinogen, urinary proteins and tissue damage. CP injection also resulted in DNA fragmentation and abnormalities. While co-treatment of VIT with CP displayed considerable ($p < 0.05$) recovery of damaged kidneys. VIT administered rats showed normal experimental parameters and tissue histology. As a conclusion, VIT is considered as an effective curative compound because of its therapeutic potential against CP prompted nephrotoxicity.

Biography

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