Protective Effect and Mechanism of Galangin against Cisplatin-induced Acute Kidney Injury in Mice

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ABSTRACT
Cisplatin (C) is an effective clinical used anti-neoplastic drug, but its major side effect, nephrotoxicity, limits its usage. A new compound which could ameliorate this side effect but did not affect its anti-neoplastic effect, would show a great clinical benefit. In previous tests, galangin (G) was found to have anti-inflammatory effects in cellular and mouse experiments, and could ameliorate propacetamol-induced liver and kidney injuries. The aim of this study is to investigate the protective effects and mechanisms of G against C-induced kidney injury in mice. Male BALB/c mice were randomly assigned into 8 groups (n=3), including WT group, C group by intraperitoneal (ip) injection of 20 mg/kg C, G100 group by intragastric (ig) administration of 100 mg/kg G, G75 group by ig administration of 75 mg/kg G, G50 group by ig administration of 50 mg/kg G, C+G100 group by ip injection of 20 mg/kg C and ig administration of 100 mg/kg G, C+G75 group by ip injection of 20 mg/kg C and ig administration of 75 mg/kg G, C+G50 group by ip injection of 20 mg/kg C and ig administration of 50 mg/kg G. Treatments of different concentrations of G were performed 30 minutes prior to ip injection of C, followed by an additional ig administration of different concentrations of G after 12 h. Mice were sacrificed 72 h after ip injection of C. Administrations of different concentrations of G did not show body weight lost and induce kidney injury. The mice in C group significantly lost body weights than mice in WT group, and showed increased serum creatinine (CREA) and blood urea nitrogen (BUN) levels. Injection of C (C group) significantly induced pathohistological changes in kidneys such as degenerations of tubular cells and hyaline casts, and then the kidney index was significantly increased than WT group. The administration of different concentrations of G (50~100 mg/kg) all significantly increased body weights of mice and showed reduced pathohistological and biochemical changes, and...

Keywords: Cisplatin-induced Acute Kidney Injury, Galangin, Protective Effect and Mechanism

REFERENCES