

Protective Effect of Protocatechuic Acid Alone and in Combination with Ascorbic Acid in Aniline Hydrochloride Induced Spleen Toxicity in Rats

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Abstract : The present study was designed to evaluate the protective effects of protocatechuic acid alone and in combination with ascorbic acid in aniline hydrochloride-induced spleen toxicity in rats. Male Wistar rats of either sex (200-250g) were used and divided into different groups. Spleen toxicity was induced by aniline hydrochloride (100 ppm) in drinking water for 28 days. Treatment group received protocatechuic acid (40 mg/kg/day, p.o), ascorbic acid (40 mg/kg/day, p.o), and combination of protocatechuic acid (20 mg/kg/day, p.o) and ascorbic acid (20 mg/kg/day, p.o) followed by aniline hydrochloride. At the end of treatment period, serum and tissue parameters were evaluated. Rats supplemented with aniline hydrochloride showed a significant alteration in body weight, spleen weight, feed consumption, water intake, hematological parameters (Hemoglobin content, Red Blood Cells, White Blood Cells and Total iron content), tissue parameters (Lipid peroxidation, Reduced glutathione, Nitric oxide content) compared to control group. Histopathology of aniline hydrochloride-induced spleen showed significant damage compared to control rats. Treatment with Protocatechuic acid along with ascorbic acid showed better protection as compared to protocatechuic acid or ascorbic acid alone in aniline hydrochloride-induced spleen toxicity. In conclusion Treatment with protocatechuic acid and ascorbic acid in combination showed significant protection in aniline hydrochloride-induced splenic toxicity in rats.

Keywords : aniline, spleen toxicity, protocatechuic acid, ascorbic acid, antioxidants

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