

Original Paper

Effect of *Dianthus carryophyllu* extract on the induced hepatotoxicity by Gentamicin in rats

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Abstract

Background and Objective: Gentamicin can cause cell destruction by generating active oxygen species leading to hepatotoxicity. This study was done to determine the effect of *Dianthus carryophyllu* extract on the Gentamicin induced hepatotoxicity in Wistar rats.

Methods: In this experimental study, 49 mature wistar rats, were randomly allocated into 7 groups including, control; Sham (saline interaperitonely); experimental group 1 was treated with 100 mg/kg/bw clove essence; experimental group 2 were received 100 mg/kg/bw of Gentamicin; and experimental groups 3, 4 and 5 were received 100 mg/kg/bw of Gentamicin along with 25, 50 and 100 mg/kg/bw of hydro alcoholic extract of *Dianthus carryophyllu* (clove), respectively for 28 days. Blood samples were taken and serum activities of Alanine Aminotransferase (ALT), Aspartate aminotransferase (AST), alkaline phosphatase (ALP) and serum concentration of total protein and albumin were measured.

Results: The serum level of aspartate transaminase and Alanine transaminase significantly increased in experimental group 2 in compared to the sham and control groups ($P<0.05$). Alkaline Phosphatase concentration significantly reduced in experimental groups 2 and 3 in comparison with sham and control groups ($P<0.05$). Albumin and total protein concentration significantly reduced in experimental groups 2 and 3 in compare to the sham and control groups ($P<0.05$). In histological examination, cell necrosis, fat accumulation and mononuclear cell accumulation reduced in experimental groups 5 in compare to Gentamicin treated group.

Conclusion: *Dianthus carryophyllu* hydro alcoholic extract is able to protect against enzyme alterations and hepatotoxicity induced by Gentamicin.

Keywords: *Dianthus caryophyllu*, Gentamicin, ALT, AST, ALP, Total protein, Albumin, Rat

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