

Cardioprotective Effect of Oleanolic Acid and Ursolic Acid against Doxorubicin-Induced Cardiotoxicity in Rats

Authors : Sameer N. Goyal, Chandragauda R. Patil

Abstract : Oleanolic acid (3-hydroxy-olean-12-en-28-oic acid) and its isomer, Ursolic acid (3-hydroxy-urs-12-en-28-oic acid) are triterpenoids compounds which exist widely in plant kingdom in the free acid form or as glycosidic triterpenoids saponins. The aim of the study is to evaluate intravenously administered oleanolic acid and ursolic acid in doxorubicin induced cardiotoxicity. Cardiotoxicity was induced in albino wistar rat with single intravenous injection of doxorubicin at dose of 67.75mg/kg i.v for 48 hrs at 12 hrs interval following doxorubicin administration in the same model cardioprotective effect of amifostine (90 mg/kg i.v, single dose prior 30 min before doxorubicin administration) was evaluated as standard treatment. Induction of cardiotoxicity was confirmed by rise in cardiac markers in serum such as CK-MB, LDH and also by electrocardiographically. The doxorubicin treated group significantly increased in QT interval, serum CK-MB, serum LDH, SGOT, SGPT and antioxidant parameter. Both the treatment group showed significant protective effect on Hemodynamic, electrocardiographic, biochemical, and antioxidant parameters. The oleanolic acid showed slight protective effect in histological lesions in doxorubicin induced cardiotoxicity. Hence, the results indicate that Oleanolic acid has more cardioprotective potential than ursolic acid against doxorubicin induced cardiotoxicity in rats.

Keywords : cardioprotection, doxorubicin, oleanolic acid, ursolic acid

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020