Hassan Saeiahan et al., J Pharma Care Health Sys 2016, 3:2 (Suppl)
http://dx.doi.org/10.4172/2376-0419.C1.014

Therapeutic effect of *Cornus mas* fruits extract against methotrexate-induced oxidative stress damage in liver and kidney of rats

Hassan Saeiahan, Mehrdad Azarmi, Homeira Hatami, Gholamreza Dehghan and **Seyed Mahdi Banan Khojasteh**
University of Tabriz, Iran

Methotrexate (MTX) is an antineoplastic drug. Some of the best-known side effects of MTX are hepatotoxicity and kidney failure. Therefore, the current study was designed to investigate the probable therapeutic effects of Cornus mas fruit extract (CMFE) in MTX-induced acute toxicity in liver and kidney of rats. Male wistar rats were divided into six groups: Control, CMFE, MTX (single dose 20 mg/kg) and three MTX (20 mg/kg)+CMFE (300, 700, 1400 mg/kg) groups. After termination of experimental days, liver and kidney tissue dissected to measure activity of some antioxidant enzymes such as superoxide dismutase (SOD), catalase (CAT) and lipid peroxidation (MDA) by spectrophotometer. The levels of Urea, Creatinine, Total-Direct and indirect bilirubin, Aspartate transaminase (AST), Alanine transaminase (ALT), alkaline phosphatase (ALP), Lactate dehydrogenase (LDH) were measured in a biochemistry auto analyzer. The levels of Uric acid were measured enzymatically and the content of albumin in blood samples were measured by electrophoresis (ELCIA) method and the levels of Na/K were measured by Ion Selective electrode (ISE) method. This study revealed that administration of CMFE (700 and 1400 mg/kg) significantly prevented MTX-induced alterations in these biochemical parameters, that is, AST, ALT, ALP, Direct bilirubin and LDH activity ($P<0.05$) and significantly prevented MTX-induced alterations in Serum concentration of Urea, Uric acid, Creatinine, K ($P<0.05$) and kidney and liver lipid peroxidation level was significantly decreased compared to MTX group ($P<0.05$). The present study indicated the nephroprotective and hepatoprotective effect of CMFE against methotrexate induced liver and kidney injury.

Biography

Hassan Saeiahan is currently pursuing BSc in Animal Biology at University of Tabriz, Iran. He has several articles under review in reputed journals about diabetes and herbal treatment. He has attended several international congresses. Mehrdad Azarmi is the last semester student of Plant Eco physiology (B.Sc.) in University of Tabriz. Dr Homeira Hatami is the associate professor of animal physiology in University of Tabriz, Iran. She has completed her PhD from Tehran University, Iran. Dr Gholamreza Dehghan is the associate professor of Biochemistry in University of Tabriz, Iran. Dr SM Banan Khojasteh is the associate professor of histology and embryology in University of Tabriz, Iran.

h.saie@yahoo.com

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