

The Effect of Pre-Treatment with Toll-Like Receptor 4 Antagonist Resatorvid on Methotrexate-Induced Liver Injury in Rats: Histopathological Study

Bassim I Mohammad¹, Bassim S Ahmed², Alaa F Hassan^{3*} and Samer F Hassan⁴

¹Department of Pharmacology, College of Pharmacy, University of Al-Qadisiyah, Qadisiyah, Iraq

²Department of Pathology and Forensic Medicine, College of Medicine, Mustansiriyah University, Baghdad, Iraq

³Department of Pharmacy, Al-Mahmoudiya General Hospital, Baghdad, Iraq

⁴Department of Surgery, College of Medicine, Wasit University.

Published August 10, 2019

ABSTRACT

Objective: This research aims to evaluate the histopathological changes after pretreatment with resatorvid against methotrexate induced-liver injury.

Methods: 28 male albino-wistar rats divided into random 4 groups (7 rats in each). Control group: Rats left untreated. Vehicle pre-treated group: Rats were administered dimethyl sulfoxide (DMSO) followed by methotrexate (MTX). Methotrexate treated group: Rats left untreated then administered MTX. Resatorvid pre-treated group: Rats were administered resatorvid followed by MTX. 24 h after the end of treatment, the animals were sacrificed. Liver tissue samples dissected out immediately and fixed in 10% formalin. The traditional procedures (paraffin-embedded method) was used to prepare liver tissue for microscopic evaluation by none alcoholic fatty liver disease (NAFLD) Activity Score Components.

Results: Liver tissue sections of MTX-treated group show moderate-to-severe steatosis of hepatic cells and micro- and macro-hepatocellular fatty degeneration and giant fatty cysts with chronic inflammatory cells infiltration. While liver tissue sections of the resatorvid pre-treated group show moderate hepatic cellular fatty degeneration, with a decreased number of fatty cysts chains and the inflammation disappeared.

Conclusion: Resatorvid hepatoprotective effect against MTX-induced injury was promising throughout resolving the accompanying inflammation and partial restoring histopathological fatty alterations.

Keywords: Liver steatosis, Methotrexate sodium, Resatorvid, TLR4 receptor

Corresponding author: Alaa F Hassan, Department of Pharmacy, Al-Mahmoudiya General Hospital, Baghdad, Iraq, E-mail: salwazni@uow.edu.iq

Citation: Mohammad BI, Ahmed BS, Hassan AF & Hassan SF. (2019) The Effect of Pre-Treatment with Toll-Like Receptor 4 Antagonist Resatorvid on Methotrexate-Induced Liver Injury in Rats: Histopathological Study. J Immunol Res Ther, 4(S1): 08.

Copyright: ©2019 Mohammad BI, Ahmed BS, Hassan AF & Hassan SF. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.