

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

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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

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