

51st CARDIOCON 2022: ABSTRACT**COMPARATIVE ANALYSIS OF HEPATOTOXIC POTENTIAL OF SIMVASTATIN WITH ROSUVASTATIN AND REVERSAL VIA MONTELUKAST & COENZYME Q10 IN BALB/C MICE****Manzoor Khan¹, Sarwat Jahan¹, Amber Ashraf¹**¹Cardiology Division, Department of Medical Specialities, KMC, KTH - MTI, Peshawar, Pakistan

Objectives: Statins cause elevations of AST and ALT, cholestatic hepatotoxicity, fulminant hepatitis, autoimmune hepatitis, and cirrhosis. (2) Various mechanisms are hypothesized including reduced levels of Coenzyme Q10, inflammation and oxidative stress. Coenzyme Q10 is anti-apoptotic and possess antioxidative potential whereas Montelukast can reduce the inflammation via inhibition of leukotriene pathway. Hence both these drugs may have a protective effect against statin induced hepatotoxicity. This study will include the comparison of hepatotoxic potential of simvastatin and rosuvastatin and assess the hepatoprotective efficacy of montelukast and coenzyme Q10.

Methodology: An experimental study of 2 weeks was conducted in the department of Pharmacology on a sample of 35 mice, randomly divided into 7 groups of 5 mice each for 2 weeks. Group 1 was used as control. Group 2 received simvastatin 50mg/kg/day of simvastatin intraperitoneally (I/P). Group 3 received I/P 50mg/kg/day rosuvastatin. Group 4 received 50mg/kg/day I/P simvastatin+3mg/kg of Montelukast. Group 5 received 50mg/kg/day of rosuvastatin +3mg/kg of Montelukast. Group 6 received 50mg/kg/day of simvastatin+10mg/kg of coenzyme Q10. Group 7 received 50mg/kg/day of rosuvastatin+10mg/kg of coenzyme Q10 I/P.

Results: Both the statins showed hepatotoxicity, however Simvastatin showed higher liver function derangements. Montelukast did not reduce hepatotoxicity significantly. A slightly lower rise in liver parameters was however observed. Coenzyme Q10 did not show any protective potential against the statins, rather higher liver function derangements were observed.

Conclusion: Simvastatin is more hepatotoxic as compared to Rosuvastatin. Montelukast does have a slight protective effect but is not significant enough. Coenzyme Q10 was not only not protective but in fact indicated a hepatotoxic trend either by itself or via potentiating of statin induced hepatotoxicity.

Keywords: Hepatotoxicity, Hepatoprotection, Oxidative stress, Inflammation

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