

COENZYME Q10 ATTENUATES METHOTREXATE-INDUCED LIVER INJURY IN RATS

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Main goal of this research was investigation the protective effects of coenzyme Q10 on methotrexate-induced liver damage. Study was performed on 32 Wistar rats divided in 4 groups, whereas first group received normal saline, second received coenzyme Q10, third received methotrexate alone and fourth group received concomitantly coenzyme Q10 and methotrexate. Morphological and functional changes in liver tissue were performed by biochemical analysis of serum, histopathological analysis of liver tissue sections and determination of parameters of oxidative stress in liver tissue. Administration of methotrexate in rats caused a significant increase of the concentrations of AST, ALT and γ -GT and significant decrease of amount of total proteins in the serum compared with C group of animals. Also, methotrexate significantly increased MDA and AOPP levels in and decreased catalase activity in hepatic tissue. Histopathological analysis showed pronounced liver damage with cellular derangement of hepatic cordons and significant cell swelling, vacuolar degeneration and signs of inflammatory response after methotrexate administration. In group of rats that received coenzyme Q10 8 days after methotrexate administration, injury of liver tissue was significantly decreased with mild disorder of normal radial arrangement of the hepatocytes and only discretely uneven distribution of hepatic glycogen content. In same group, biochemical analysis showed significantly decreased concentrations of serum parameters of liver injury and changes of parameters of oxidative stress were statistically significantly ameliorated compared with results in group that received methotrexate alone. Our results confirmed coenzyme Q10 as a protective agent in methotrexate-induced hepatotoxicity probably due to its antioxidant effects.

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