Hepatoprotective and Therapeutic Effects of Tetramethylpyrazine on Acute Econazole-induced Liver Injury

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摘要

Abstract

2,3,5,6-Tetramethylpyrazine (TMP) is well known as a true calcium antagonist. The aim of this study was to investigate the hepatoprotective and therapeutic effects of TMP on acute econazole-induced liver injury. The hepatological effect of various concentrations of TMP was first assessed by the biochemical assays of SGOT and SGPT and then by hepatohistological microscopic examination. The dose-response relationship of liver injury induced by various doses of econazole was observed simultaneously from serum biochemical assay of SGOT and SGPT, and also from hepatohistological microscopic examination, by determination of the hepatoprotective effects of various concentrations of TMP on SGOT and SGPT elevation induced by a hepatotoxic dose of econazole (300 mg/kg). The inhibitory effect of various concentrations of TMP or vitamin E (positive control, 0.5 mM in vitro, 0.69 mM in vivo) on FeCl 2 -induced (in vitro) or econazole-induced (in vivo) lipid peroxidation was also investigated. The superoxide scavenging activity of various concentrations of TMP in econazole-damaged rat liver homogenate was assessed by the cytochrome C reduction method. Results showed that the hepatoprotective effect of TMP might be, at least in part, due to its inhibitory ability on membrane lipid peroxidation and free radical formation, or due to its free radical scavenging ability. Improvement of serum transaminases and MDA levels in rat liver homogenate, hepatohistological microscopic examination, and assessment of free radical scavenging activity by the cytochrome C reduction method were used to detect hepatoprotective and therapeutic effects of TMP on acute econazole-induced liver injury