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Antioxidant and Hepatoprotective Activity of Vitamin E and EGb 761 in Experimental Endotoxemic Rats

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Abstract: In this experimental study, we investigated whether vitamin E and EGb 761 have any influence on endotoxemic rats and liver histopathology. Forty rats were divided into four groups of 10 animals in each group. The control rats were untreated and comprised group 1. Two ml serum was applied to the rats intraperitoneally (i.p.) in group 2, and then 0.5 ml endotoxin solution (E. Coli 0:157:H7, 10⁹ bacteria/ml) was given to the same group two hours later. Not only endotoxin solution but also vitamin E (600 mg/kg) was given to the rats in group 3. Endotoxin solution and EGb 761 (50 mg/kg) were given to the rats in group 4. The experiment lasted 24 hours. In group 2, liver histopathology showed large hepatocytes surrounding the mononuclear inflammatory cells, enlarged v. centralis, increased connective tissue fields, and moderately active hyperemia. In group 3, there was a decrease in v. centralis enlargement. In group 4, there was near to normal width vena centralis. The experimental data were analyzed by Anova and Scheffe's test. In groups 3 and 4, prominent amelioration was seen in tissue samples in biochemical evaluations, along with increased serum alanine aminotransferase (ALT), aspartate transaminase (AST), lactate dehydrogenase (LDH), and erythrocyte malondialdehyde (MDA) values were more significant in group 2 than in groups 3 and 4. We suggest that anti-oxidants such as vitamin E and EGb 761 can be useful in preventing cellular liver damage caused by oxygen free radicals.

Key Words: Endotoxemia, Vit E, EGb 761, MDA and liver histopathology

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