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Effects of Angiotensin Converting Enzyme Inhibitors in Healthy Rats and in Rats With Carbon Tetrachloride-Induced Toxic Hepatitis

Ercüment OVALI[1]
Mustafa ,CETİNER[2]
Siret RATİP[2]
Fazıl AYDIN[1]
Yavuz TEKELİOĞLU[3]
Sami KARTI[2]
Asım ÖREM[4]
Gökhan HAROVA[5]
Levent ALBAYRAK[6]
Nazım AĞAOĞLU[7]
Departments of [1]Internal Medicine, [3]Histology and Embryology, [4]Biochemistry, [7]General Surgery, Faculty of Medicine, Black Sea University, Trabzon, [2]Department of Internal Medicine, Faculty of Medicine, Marmara University, İstanbul, [5]Department of Pathology, Faculty of Medicine, Kocaeli University,İzmit, [6]Department of Pathology, Ankara Numune Hospital, Ankara-TURKEY

Abstract: Sulphydryl-containing captopril (CPR) appears to act as a scavanger of oxygen derived free radicals. This is not present in other angiotensin-converting enzymes such as enalapril (EPR). The hepatotoxic effect of carbon tetrachloride (CCl4) may result from induction of reactive oxygen free radicals. The aim of this study was to analyse the effects of CPR and non- sulphydryl-containing enalapril (EPR) in healthy rats and in rats with CCL4-induced toxic hepatitis. The rats were divided into two major groups. The first group consisted of healthy rats, and the second group consisted of rats with CCl4- induced toxic hepatitis. Each major group was sub-divided into 3 groups, where CPR, EPR, or a placebo was administered. The resulting 6 sub-groups were analysed for the hepatic effects of CPR and EPR in healthy rats and in rats with CCl4-induced toxic hepatitis. Co-administration of CPR or EPR with CCl4 lead to an increase in hepatic enzyme levels, and to a greater level of liver damage in comparison with CCl4 alone. In conclusion, both CPR and EPR may lead to hepatotoxicity, and sulphydryl-containing CPR does not appear to protect the liver from the toxic oxidant effect of CCl4.

Key Words: Captopril, enalapril, carbon tetrachloride, hepatotoxicity.

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