

7TH INTERNATIONAL VETERINARY CONGRESS

September 04-05, 2017 | Paris, France

Regulatory role of lycopene on liver enzymes in diethylnitrosamine administrated rats

Emre Kaya, Seval Yilmaz and Selda Telo
Firat University, Turkey

Statement of the Problem: Diethylnitrosamine (DEN) is a potent genotoxic nitroso carcinogen that induces hepatocellular carcinomas in rat liver.

Methodology & Theoretical Orientation: In this study, adult male Wistar-Albino rats were used. Rats were divided into five groups as follows; control group, lycopene group (lycopene was administered), DEN group (DEN was administered), lycopene+DEN group (lycopene administration was started 10 days before the DEN administration) and DEN+lycopene group (Lycopene administration was started together with the DEN administration). DEN was administered to rats at 200 mg/kg/bw, a single dose i.p. for 90 days. Lycopene was administered to rats every other day at 10 mg/kg/bw, gavage for 10 days. Plasma aspartate transaminase (AST), alanine transaminase (ALT), alkaline phosphatase (ALP), lactate dehydrogenase (LDH), creatine kinase (CK) activities and cholesterol levels were determined.

Findings: It wasn't found statistically significant difference in plasma AST, ALT, ALP, LDH, CK activities and cholesterol level in the lycopene group when compared with the control group. Plasma AST, ALT, ALP, LDH, CK activities and cholesterol levels were detected to significant increases in the DEN group when compared with the control group ($p < 0.001$). Plasma AST, ALT, LDH activities and cholesterol level were detected to decrease in the lycopene+DEN and DEN+lycopene groups when compared with the DEN group ($p < 0.05$). However, plasma ALP and CK activities were not changed in the lycopene+DEN and DEN+lycopene groups when compared with the DEN group.

Conclusion & Significance: It was observed that DEN causes a change to in some liver specific enzymes in plasma of DEN administered rats. These results indicate that lycopene might have a protective effect against DEN induced hepatotoxicity by regulating these enzymes.

Biography

Emre Kaya is a PhD in Department of Biochemistry, Faculty of Veterinary Medicine, Firat University, Turkey, Turkey. He is continuing his scientific studies in various subjects in the same place. His work focuses more on oxidative stress and its prevention.

emre_57000@hotmail.com

Notes: