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**Effect of selenium and zinc on prophylaxis from alcoholic liver disease****Hossein Kargar Jahromi, Faezeh Sadeghian and Hesam Nikseresht**

Jahrom University of Medical Sciences, Jahrom, Iran

**Statement of the Problem:** Alcoholic liver disease is one of the important causes of morbidity and mortality in the world. There are vast range of clinical and laboratory signs in alcoholic liver patients. Unfortunately, many patients are initially asymptomatic and only when the disease become very advanced and causes complete hepatic insufficiency is diagnosed. Oxidative stress caused by alcohol can increase lipid peroxidation in the liver cell membrane. Byproducts of oxidation are harmful and can affect the nucleotides and protein synthesis. Also, this compounds lead to increase secretion of inflammatory cytokines and activation of hepatic stellate cells and eventually lead to fibrosis, inflammation and apoptosis. To date, exclusive treatment is not known for them but according to oxidative stress role in the pathogenesis of this disease and low levels of antioxidants in the patients, the researchers focus on the use of antioxidants in the treatment of this disease. Selenium and zinc have antioxidant properties and protect the liver. With regard to increase in the prevalence of alcoholic fatty liver, the aim of this study is investigation the effects of zinc and selenium in the prevention of alcoholic fatty liver injury.

**Methodology & Theoretical Orientation:** In this experimental study, 40 adult male Wistar rats were divided into 5 groups of 8 include: control, experimental group 1 (received ethanol at the concentration of 25% and selenium at the concentration of 1mg/Kg), experimental group 2 (received ethanol with the concentration of 25% and zinc at the concentration of 227 mg/L), experimental group 3 (received selenium at the concentration of 1 mg/Kg) and experimental group 4 (received zinc at the concentration of 227 mg/L). Animals were treated for 70 consecutive days. All experimental groups received Lieber DeCarli food. One day after the last injection, blood samples were taken from heart and serum levels of ALT, AST, ALP and also levels of GPX were measured. Results were analyzed by ANOVA statistical test and also Duncan's test with significant level of  $p \leq 0.05$ .

**Findings:** Experimental and control groups are compared and no significant difference in all parameters was shown. In experimental group 1 (alcoholic fatty liver) compared to the control and sham groups it was shown that mean serum levels of ALT, AST and ALP significantly increased and level of GPX significantly decreased. In the groups which received selenium and zinc it was shown that mean ALP serum levels significantly decreased and GPX levels increased significantly. In experimental groups 4 and 5 mean serum levels of ALT, AST and ALP level significantly increased and also there was seen significant reduction in GPX level. Mean serum level of AST and ALP significantly increased and no significant change was shown in GPX level in experimental group 6. Compared experimental groups 4, 5 and 6 with group 1 (alcoholic fatty liver) average serum of ALT, AST and ALP levels were significantly decreased and the GPX increased.

**Conclusion & Significance:** The results showed that receiving selenium and zinc at the same time, due to their higher antioxidant properties, possibly can have hepatoprotective effects and prevent alcoholic fatty liver more than taking any of these drugs individually.

**Biography**

Hossein Kargar Jahromi has a PhD in Comparative Histology. He is a member of Research Center for Noncommunicable Diseases, Jahrom University of Medical Sciences, Jahrom, Iran and Zoonoses Research Center, Jahrom University of Medical Sciences, Jahrom, Iran.

hossein.kargarjahromy@yahoo.com

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