

## عنوان مقاله:

Selenium Safeguards the Liver Against  $\delta$ -Fluorouracil Induced Toxicity

## محل انتشار:

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## خلاصه مقاله:

Background: The hepatotoxic effect of  $\delta$ -fluorouracil ( $\delta$ -FU) can deprive cancer patients of its maximum therapeutic benefits. Selenium (Se) is a trace element with potential benefits in some animal models of diseases. Objectives: This study assessed the ability of Se to nullify the hepatotoxic effect of  $\delta$ -FU in albino rats. Methods: In this study, 40 adult male albino rats were grouped into A to D (each  $\delta$  rats). Rats in group A (control) were treated intraperitoneally (IP) with normal saline (0.2 mL) daily for  $\delta$  days. Rats in groups B<sub>1</sub> to B<sub>3</sub> were treated IP with Se (0.125, 0.25, and 0.50 mg/kg) daily for  $\delta$  days, respectively. Rats in group C were treated IP with  $\delta$ -FU (20 mg/kg) daily for  $\delta$  days. Rats in groups D<sub>1</sub> to D<sub>3</sub> were treated IP with Se with 0.125, 0.25, and 0.50 mg/kg before treatment with  $\delta$ -FU (20 mg/kg) daily for  $\delta$  days, respectively. After treatment, the rats were euthanized, and their blood samples were collected and evaluated for serum liver function. Liver samples were evaluated for biochemical and histological parameters. Results: Liver and serum aminotransferases, gamma-glutamyl transferase, lactate dehydrogenase, alkaline phosphatase, total bilirubin, and conjugated bilirubin levels were significantly ( $P < 0.001$ ) high in  $\delta$ -FU-treated rats in comparison to the control group. Liver glutathione peroxidase, superoxide dismutase (SOD), catalase, and glutathione levels were significantly ( $P < 0.001$ ) low whereas the malondialdehyde level was significantly ( $P < 0.001$ ) high in  $\delta$ -FU-treated rats compared with the control group. Moreover, hepatocyte necrosis was observed in  $\delta$ -FU-treated rats. Conclusion: Nonetheless,  $\delta$ -FU-induced hepatotoxicity was significantly nullified in rats supplemented with Se (0.125 mg/kg,  $P < 0.05$ ; 0.25 mg/kg,  $P < 0.01$ , and 0.5 mg/kg,  $P < 0.001$ ) in a dose-dependent fashion in comparison to  $\delta$ -FU-treated rats. Thus, Se may have a clinical benefit in  $\delta$ -FU-induced hepatotoxicity

## کلمات کلیدی:

Fluorouracil, Liver chemotherapy, Toxicity, Selenium, Protection, Antioxidant- $\delta$

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