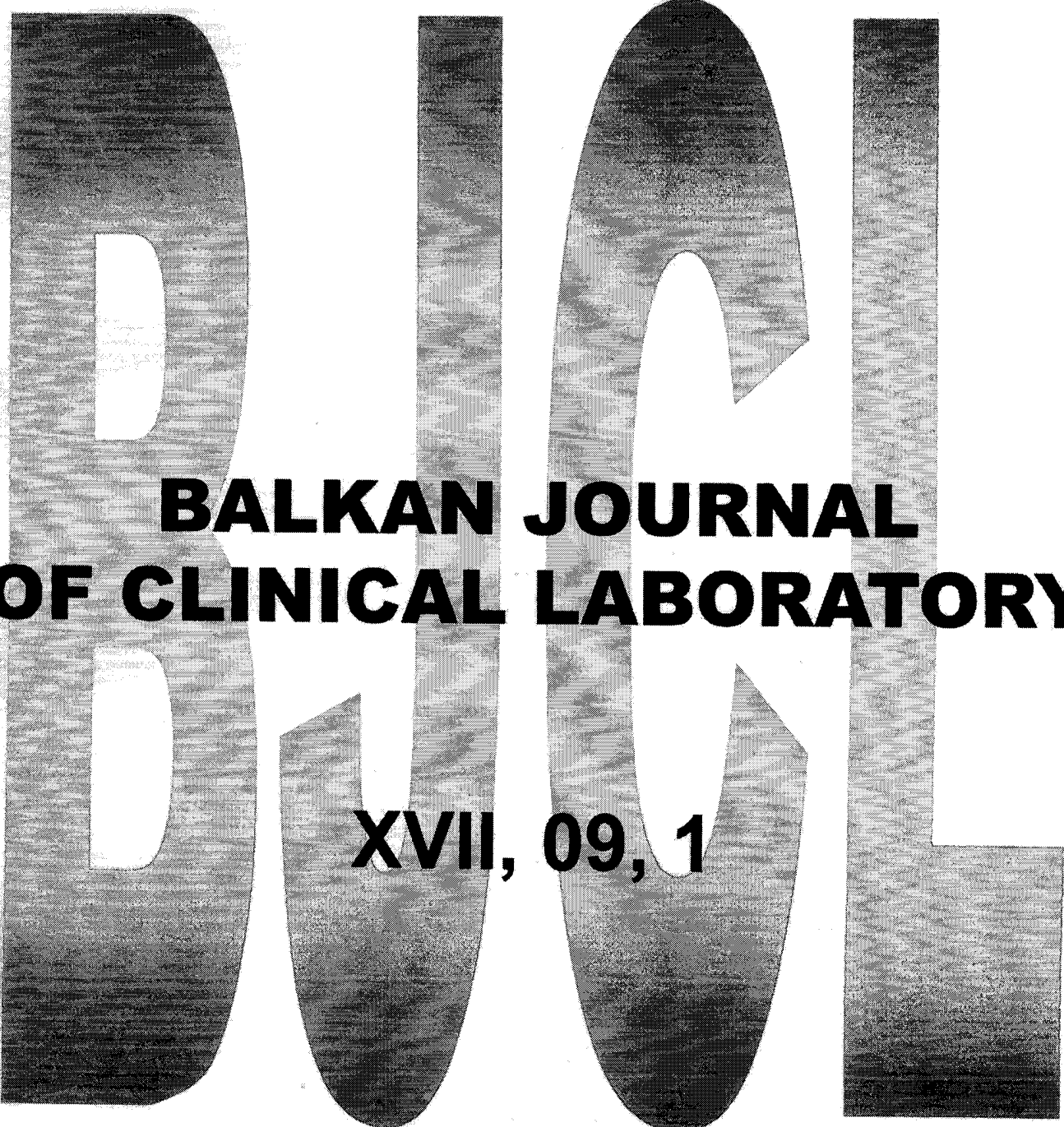


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Proceedings
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PP-131

PROTECTIVE ROLE OF VITAMINS E AND C IN CARBON TETRACHLORIDE INDUCED ACUTE LIVER DAMAGE

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Background: The CCl₄ hepatotoxic impact is achieved when it is activated to form highly reactive radicals, which have various effects; initiation of lipid peroxidation being probably the most important one. The toxic outcome may be prevented through use of antioxidants; vitamin E presenting the first line of defence. Keeping the concentration of reduced vitamin E, requires a network of other antioxidants that can reduce the radical form of vitamin E to its native form. Vitamin C is an antioxidant that is able to reduce vitamin E directly.

Our objective was: to investigate the CCl₄-induced hepatotoxicity and the possible protective effect of the vitamins E and C.

Material and methods: The laboratory animals (Wistar rats) were treated with vitamin E or combination of vitamins E and C and with the hepatotoxic agent - CCl₄. The hepatic injury was estimated by tracking the blood circulation levels of alanine aminotransferase and aspartate aminotransferase.

Results: In both cases, after CCl₄ application, significantly lower serum ALT and AST levels were observed in the animals that received vitamins compared to the control group. The difference was more distinctive in the case of the animals treated with a combination of the two vitamins (E and C).

Conclusion: These findings suggest that both of the vitamins have a protective effect against the CCl₄-hepatotoxicity, with the combination of the two vitamins being the most successful at this task. This is due to the ability of the vitamin C to reduce vitamin E continuously, making it readily available for free-radical-quenching and breaking of the lipid peroxidation chain.

PP-132

PROTECTIVE EFFECT OF CELERY JUICE IN TREATMENTS WITH DOXORUBICIN

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Background & aims: Numerous studies show that active principles from plants have multiple effects on metabolism and may alter activity of different drugs. These findings have led us into examination of influence of celery roots and leaves juices on certain biochemical parameters in doxorubicin treated animals

Methods: We have measured biochemical parameters in liver homogenate rats.

Extent of lipid peroxidation (LPx) was determined after Buege and Aust, and content of reduced glutathione (GSH) after Kapetanovic and Mieval. Activities of enzymes were determined: peroxidase (Px) after Simon et al., catalase (CAT) after Beers and Sizer, Glutathione peroxidase (GSH-Px) after Chin et al., xanthine oxidase (XOD) after Bergmayer.

Results: LPx was decreased only by celery leaves juice, activities of XOD, CAT, Px, and GSHPx were increased by celery roots and leaves juices. Their combination with doxorubicin increased XOD activity, while doxorubicin administered alone did not change activity of this enzyme. Activity of CAT was not influenced by doxorubicin, neither by combination of doxorubicin and celery juices. Peroxidase activity was increased by celery roots and leaves juices and by doxorubicin, while their combination did not influence activity of this enzyme. Activity of GSHPx was generally increased, except by celery roots and leaves juices and combination of doxorubicin and celery roots juice. GSH was increased by celery roots and leaves juices and decreased by combination of doxorubicin and both juices, while doxorubicin alone did not show any influence.

Conclusion: Celery roots and leaves juices influenced the examined biochemical parameters and showed protective effects when applied with doxorubicine.

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