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Poster

Poster session 1-9

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IN VIVO EFFECTS OF URSODEOXYCHOLIC ACID ON DOXORUBICIN-INDUCED OXIDATIVE INJURY OF HEPATOCYTE

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Background: Doxorubicin (D) is a potent antineoplastic agent; however, hepatotoxic events are significant hurdle in cancer patients with liver disease. The overproduction of reactive oxygen species is considered as a significant cause of this side effect. The aim of our study was to evaluate the potential hepatoprotective properties of bile acid an ursodeoxycholic acid (U), through its influence on lipid peroxidation (LPO) and expression of glutathione-dependent antioxidative enzymes in the livers of rats treated with D.

Methods: 24 male Wistar rats were divided in four groups. Animals were administered with vehicle (saline i.p. (K1), saline i.p. with propylene glycol p.o. (K2)), D (3 mg/kg i.p. every other day for 3 doses) or combined U 25 mg/kg p.o. every other day for 3 doses, starting one day before D. After four weeks animals were euthanized and the livers were used for analysis of oxidative stress.

Results: In the livers of animals administered with D, LPO was increased compared to both control groups, whereas in DU group the intensity of LPO was decreased, closely to control values. Treatment with D significantly increased the specific activities of glutathione peroxidase (GPx) compared to control groups ($p<0.01$ vs.K1 and K2). Combined treatment with D+U decreased GPx activity. Similarly, the activity of glutathione reductase was highest in group D and lower in group DU. Specific activity of glutathione-S-tranferase was significantly increased in D-treated group compared to controls ($p<0.05$ vs. K1 and K2), and decreased in DU group, however without statistical significance.

Conclusions: Ursodeoxycholic acid reduces expression of markers of oxidative stress representing thus an agent with potentially hepatoprotective properties during doxorubicin treatment. Acknowledgment: Supported by HORIZON2020 MEDLEM project No. 690876, and the Project for Scientific and Technological Development of Vojvodina No. 114-451-2072-/2016-02 and project of Ministry for education, science and technological development of the Republic of Serbia, grant III41012.