

THE COMPARISON OF EFFECT OF BILE ACIDS ON THE HEART OF NORMAL RATS AND RATS WITH ISOPRENALINE INDUCED CARDIOMYOPATHY

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The aim of the work was the comparison of effects of bile acids, mostly used in the therapy, on some parameters of heart activity after their chronic administration. Their possible effects on cardiovascular system are partially known from literature (1, 2). Chenodeoxycholic acid (CDCA), ursodeoxycholic acid (UDCA) and deoxycholic acid (DCA) were administered orally once a day in doses 1 g/kg and 0.5 g/kg respectively during 4 weeks. Female rats intoxicated with a dose of isoprenaline 30 mg/kg administered subcutaneously 24 hours before the experiment were used. ECG and blood pressure were measured using Mingograf Siemens-Elema at the beginning and during the experiment, while in 10 minutes intervals mediators of vegetative nervous system were intravenously given. We evaluated R wave height, frequency, PQ, QRS, QT and ST interval length and qualitatively ST interval depression or elevation, P wave absence and pathological Q wave occurrence. After finishing of experiments hearts of all animals were histologically examined.

Model of isoprenaline cardiomyopathy in rats was accompanied with ST interval shortening and R wave reduction. CDCA administration worsened these findings, while UDCA antagonised ST interval shortening. Percentual occurrence of changed ratio of ST elevation to R wave height is statistically significantly higher both after administration of isoprenaline and even after premedication of CDCA

and DCA.

On the basis of blood pressure measurement we also evaluated the influence on adrenaline hypertension and isoprenaline and acetylcholine hypotension. Reactivity to hypotensive drugs was slightly higher expressed after the administration of bile acids, while reactivity to adrenaline was lower after UDCA and slightly higher after DCA. CDCA induced nonsignificant increase of diastolic blood pressure.

Necrotic changes found histologically were not influenced by bile acids administration.

1. Kadlubowski, R. et al.: Further studies on properties of bile acids. *Acta Physiol. Pol.*, 1984, 35, 5/6, 491-499.
2. Joubert, P.: An in vivo investigation of the negative chronotropic effect of cholic acid in the rat. *Clin. Exper. Pharm. Toxicol.*, 1978, 5, 1-8.

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