

# CIRCADIAN RHYTHM OF ALBUMIN AND TOTAL PROTEIN CONTENT IN BLOOD SERUM OF INTACT RATS AND ON THE BACKGROUND OF PARACETAMOL HEPATITIS

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The aim of our work was to study the circadian rhythm of albumin and total protein content in intact rats and in the conditions of paracetamol hepatitis.

**Materials and methods.** The study was conducted on mature male and female rats weighing 150-200 g in the spring (March 2015). The albumin and total protein level were made in intact rats and on the background of one-day paracetamol hepatitis. In order to establish circadian dynamics of albumin and total protein level in blood serum of animals in defined hours: 09 a.m., 03 p.m., 09 p.m., 03 a.m. they were decapitated, the blood was taken and blood serum obtained. The results were calculated with the help of mathematical statistics methods Cosinor-Analysis 2.4 for Excel 2000/XP followed by chronogramm obtaining and their detailed analysis. The analysis determined hronohram akrofazu and batyfazu.

**Results and Discussion.** According to the results of experiment, akrofaze of albumin level in females accounted for 09.30 p.m. (45.67 mg per l), while batyfaze observed at 09 a.m. (38.62 mg per kg). Akrofaze batyfaze of males are shifted to one hour before relatively to females 10.30 p.m. and 10 a.m., respectively. On the background of paracetamol administration no significant changes of albumin level between intact and animals with model pathology were observed, but the conversion of akrofaze and batyfaze time confirming the development of desynchronosis in terms of pathology in violation of circadian rhythm. Akrofaze was at 04 a.m. in females and at 06 a.m. in males and batyfaze was at 04 p.m. in both sexes.

According to the total protein level it was found that females akrofaze was at 04 a.m. (79.60 g per l); 02 a.m. in males (89.80 g per l), when batyfaze of rates in both sexes was at 04 p.m. Introduction of parecetamol has caused desynchronosis of preset rate, according to the time of akrofaze and batyfaze onset. There were no significant differences in total protein level between the intact animal and rats with control pathology, due to insufficient depressing action of xenobiotics on protein sunthesis of the liver in case of its single injection.

**Conclusions.** Thus, according to the data obtained the total protein and albumin level is characterized by circadian dynamics of content in blood serum, with specific akrofaze in the dark period of the day: 09 p.m.-11 p.m. – albumin; 02 a.m.-04 a.m. – total protein level; and batyfaze in light period of day 09 a.m.-10 a.m. – albumin; 04 p.m. – total protein level. Paracetamol introduction causes desynchronosis above the threshold rate, with the time dislocation of akrofaze and batyfaze.

The received data should be considered in the formulation of experimental study of prospective hepatoprotectors and adequate interpretation of experimental results.