EFFECT OF YOHIMBINE HYDROCHLORIDE ON THE LEVEL OF SOMATOTROPIN IN RATS

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Introduction. Yohimbine is a common compound of medicines and dietary supplements misused by athletes to improve results and fitness. These dietary supplements used by sportspersons irrespective of age and gender, and theirs therapeutic regimen is rather long-term. In this mode, the use of this drug can cause not only common side effects (tachycardia, increased blood pressure, tremor, headache etc.) by the exposure to sympathoadrenal system, but also have a negative impact on other regulatory systems of the body, particularly on hypothalamic-pituitary axis (*somatotropin* secretion).

Aim. The aim of this research was evaluation of the effect of yohimbine hydrochloride on serum growth hormone content in rats of different sex and age as a spicific aspect of drug safety, which displays processes of growth and enlargement.

Materials and methods. The experiment was carried out on 80 Wistar line rats of different sex and age, divided by 8 experimental groups of 10 animals each. We used animals aged 1 month and 3 months, to assess the impact of yohimbine hydrochloride on rats before and after puberty. To simulate the therapeutic intake of yohimbine hydrochloride in animals, rats ware intragastrically administered per 0.34 mg/kg for 21 days. For an unbiased assessment of the influence of the drug on the growth and enlargement processes, the dynamics of animal`s body weight and serum somatotropin content were studied.

Results and discussion. Result of our study showed that after a therapeutic course of yohimbine hydrochloride content of growth hormone in young male rats serum was significantly lower than the intact control values by 37.2%. Young female rats somatotropin levels in blood decreased dramatically by 51.7% compared to the physiological normal values, due to females α-adrenal system occupies a very important role in the regulation of the hypothalamic-pituitary system. The obtained data positively correlated with the dynamics of the body weight of animals during the growth period: yohimbine hydrochloride reduced body weight from 15 to 22 g depending on the sex of the animals. In animals that have passed puberty, yohimbine hydrochloride caused less measurable changes of the content of growth hormone in the blood serum. This partly deals with the fact that with aging in mammals common physiological secretion of somatotropin decreases.

Conclusions. This research results indicates that yohimbine hydrochloride can reduce the dynamics of weight gain and serum somatotropin level in rats. Especially, it observed in animals of prepuberty age. These data predict the potential harm to young athletes who take yohimbine and justify the restrictions on the use of medicines and dietary supplements with yohimbine within certain age groups of consumers.