Path morphology of the Testis in White Outbreed Rats During Intoxication with Energy Drink

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ABSTRACT

In recent years, there has been a growing demand for energy drinks among young people. However, the effect of energy drinks on the reproductive system, including the testes, has not yet been fully studied. This article presents an analysis of pathomorphological changes in the testis tissue under the influence of energy drinks in 3-month-old white rats

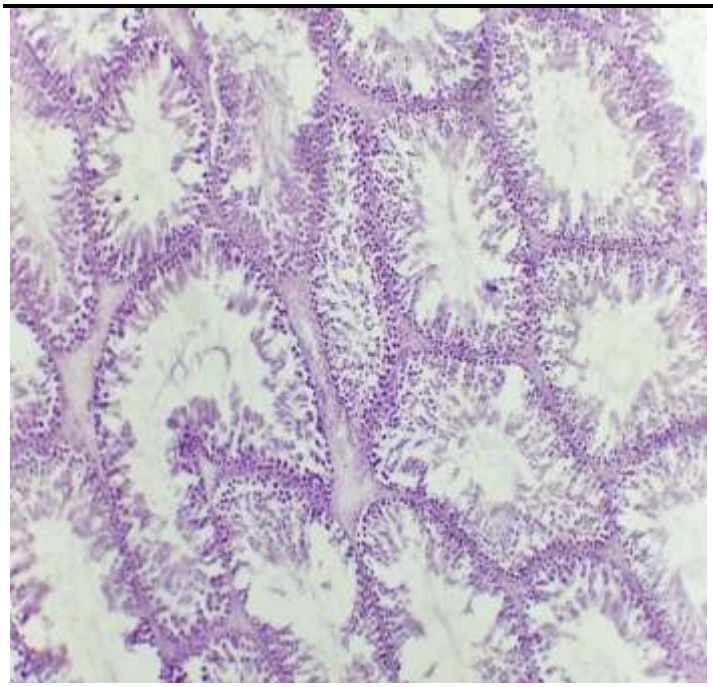
Keywords: testis, morphology, energy drink, rat.

Purpose of the study. The aim of this study is the morphological study of the testis tissue of three-month-old outbred rats under the influence of energy drinks.

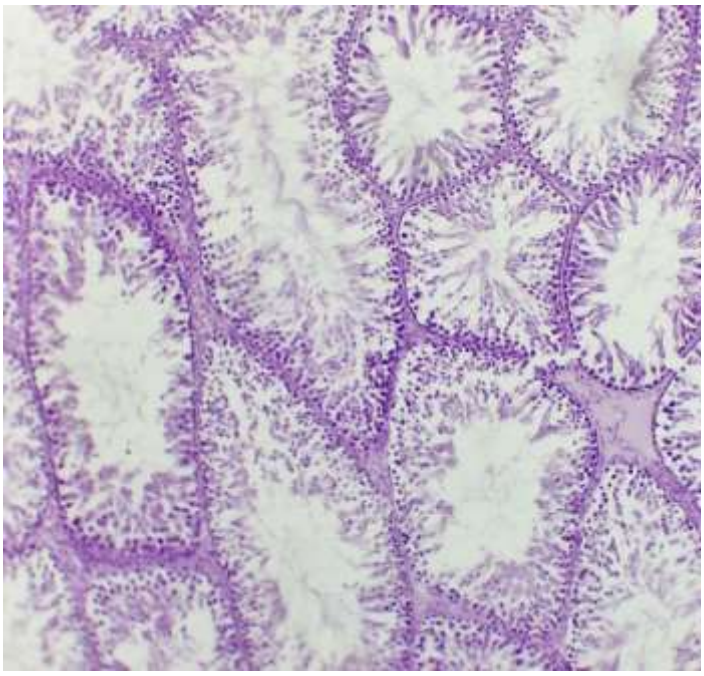
Research methods. The study of the micromorphology of the testes was carried out on 50 outbred rats at the age of 3 months, which are under normal vivarium conditions. At the beginning of the experiment, all sexually mature rats were placed in a week-long quarantine, and after exclusion of somatic or infectious diseases, they were transferred to the usual regime of the vivarium with three meals a day. Within 30 days, from the 91st day of development to the 120th day, rats were injected with a metal probe into the stomach with an energy drink in a volume of 10 ml. The studies were carried out in compliance with the rules of humane treatment of animals, which are regulated by the "Rules for carrying out work using experimental animals", approved by the ethics committee of the Bukhara State Medical Institute named after A.I. Abu Ali ibn Sino (No. 18 of 01/16/2018).

In total, 50 rats were used in the experiments, the animals were slaughtered at the appropriate time in the morning, on an empty stomach by the method of instantaneous decapitation under ether anesthesia. After opening the abdominal cavity, the testicles were removed. The isolated tissue of the testicles was examined pathoanatomically. Hematoxylin and eosin staining for general histopathology. For general histopathology, 1 piece 1.5×1.5 cm in size was excised from the testicular tissue and solidified in 10% neutralized formalin. After washing in running water for 2–4 h, it was dehydrated in concentrated alcohols and chloroform, then filled with paraffin, and bricks were prepared. Incisions 5–8 μm in size were made from paraffin blocks and stained with hematoxylin and eosin. Histological preparations were studied under the lens of a 20 light microscope and the necessary areas were photographed.

Research results. The results of this study showed that under the influence of an energy drink in the testes, the following morphological changes were observed: Edema of the intertubular gap, proliferation of spermatocytes, and a decrease in the number of spermatozoa. (Fig. 1, 2).



Rice. 1 Testicle of a 90 day old rat. 1-lumen of the convoluted seminiferous tubule; 2-intertubular spaces, glandulocyte cells; 3-intertubular arteriole. Swelling of the intertubular gap, proliferation of spermatocytes, decrease in the number of spermatozoa. Stained with hematoxylin-eosin. Ob.10 x Ok.20



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Rice. 2. Testis of a 90 day old rat. 1-convoluted seminiferous tubules; 2-intercanal space. Stained with hematoxylin-eosin. Ob.10 x Ok.20

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