WEB OF SCIENTIST: INTERNATIONAL SCIENTIFIC RESEARCH JOURNAL
ISSN: 2776-0979, Volume 4, Issue 5, May, 2023

THE EFFECT OF ASPIRIN AND PARACETAMOL ON THE TESTES

Yodgorov I. F.
Bukhara State Medical Institute

Abstract
The article presents data on the effect of aspirin and paracetamol on the testes of outbred rats.

Keywords: testicles, aspirin, paracetamol

The development of preventive measures for the protection of reproductive health and heredity is currently of particular importance due to the increased negative impact of a complex of social, environmental and professional factors. Recent studies have shown that the role of male reproductive health is more than 50% in leaving healthy offspring. Male reproductive function is influenced by social and hygienic factors, including place of work, harmful factors of production, quality of work, average income, marital status. Among medical and biological factors, the main ones are congenital defects of the reproductive system, previous diseases and their complications, uncontrolled intake of drugs [1-13].
Anti-inflammatory drugs are one of the most widely used drug groups in medicine. Their advantage is a complex effect, as well as a wide range of indications for use. However, currently available data on the results of treatment with these drugs do not allow unambiguous conclusions about the exact effect of their effects on the reproductive system, especially on the testicles and epididymis.

The Purpose of the Study:

To study the effect of non-steroidal anti-inflammatory drugs on the testis and its appendages in white rats.

Material and Methods

During the experiment, 50 purebred male rats were selected. They were kept under standard vivarium conditions and quarantined for 2 weeks prior to experiments.
In this group of rats, the effect of the following anti-inflammatory drugs was studied: Aspirin (active substance - acetylsalicylic acid, belongs to the clinical and pharmacological group of NSAIDs, antiplatelet agents), Paracetamol (active substance - paracetamol, belongs to the clinical and pharmacological group). pharmacological group NSAIDs, analgesics-antipyretics). Aspirin 31.3 mg/kg and

paracetamol 94.1 mg/kg, mixed with 0.5 ml of distilled water, were administered to rats intragastrically through a metal tube for 10 days.

Rats of the experimental group were anesthetized under light ether (chloroform) anesthesia on an empty stomach. For morphological study, the testes were isolated, weighed, fixed in 10% neutral formalin, dehydrated in alcohol of increasing concentration, and embedded in paraffin. Sections 5–7 μm thick were prepared on a microtome, deparaffinized in xylene, stained with hematoxylin and eosin, and examined by morphological and morphometric methods.

Research Results

Under experimental conditions, we studied the morphological changes occurring in the testes of male rats, which were orally administered non-steroidal anti-inflammatory drugs. Let us briefly mention the mechanism of action of aspirin and paracetamol on the body used in the research work. After entering the body, non-steroidal anti-inflammatory drugs (NSAIDs) bind to blood plasma proteins, affect the thermostatic center of the subcortical center of the brain, dilate blood vessels and reduce body temperature. This process inhibits the synthesis of cyclooxygenase-1 and inhibits the synthesis of mucosal and interstitial prostaglandins. It is the Leydig cells of interstitial cells located outside the seminiferous tubules that inhibit the synthesis of testosterone, active steroid hormones.

The hormone testosterone must pass through the testo-hematogenous barrier, stimulate Sertoli cells and ensure the normal course of spermatogenesis. Due to the above action of aspirin + paracetamol, the “reconnection” between the Leydig and Sertoli cells is lost, delaying the process of spermatogenesis, i.e. mitosis and meiosis under the influence of biologically active substances produced by Sertoli cells: insulin-like growth factor IFG, FGF, TGF-α, TGF-β is manifested by slowing down or lagging behind. It is caused by impaired synthesis of active substances, dedifferentiation of most spermatogenic cells, apoptosis (programmed cell death), preservation of spermatogonial cells at various stages of transdifferentiation into spermatozoa, and inhibition of the development of mature cells (spermatozoa). Of course, it should be noted that the full development of this process, the duration of the action of influencing factors depends on the concentration of toxic substances and manifests itself in different ways.

Conclusion

In our research work, such changes are observed as a result of oral administration of aspirin + paracetamol to rats. As a result, the sequence of ordered differentiation of

spermatogenic cells is relatively reduced. Microscopic examination revealed that 3/2 of the convoluted tubules of rats were of the same size in the field of view, the walls of the tubules were mostly normal, the location of myoid cells was not changed, and the relief of the basement membrane was flat.

References:

1. B. Z. Khamdamov, & I. F. Yodgorov (2022). ASSESSMENT OF THE EFFECTIVENESS OF DIAGNOSIS AND THERAPY OF PATIENTS WITH CHRONIC BACTERIAL PROSTATITIS. Scientific progress, 3 (1), 31-33.
2. Fakhriddinovich, Y. I. . (2022). Optimization of Empirical Treatment of a Complicated by Pyelonephritis. INTERNATIONAL JOURNAL OF HEALTH SYSTEMS AND MEDICAL SCIENCES, 1(6), 295–299.
3. Fakhriddinovich, Y. I. (2022). Optimization of Remote Shock-Wave Lithotripsy on the State of Renal Parenchyma in Patients with Nephrolithiasis. Central Asian Journal of Medical and Natural Science, 3(6), 720-724. https://doi.org/10.17605/OSF.IO/48S3H
4. Yodgorov I.F., THE EFFECT OF ASPIRIN AND PARACETAMOL ON THE TESTES AND EPIDIDYMIS OF THE WHITE OUTBRED RATS //New Day in Medicine 5(55)2023 105-111
5. Тешаев, Ш. Ж., & Баймурадов, Р. Р. (2020). Морфологические параметры семенников 90-дневных крыс в норме и при воздействии биостимулятора на фоне радиационного облучения. Оперативная хирургия и клиническая анатомия (Пироговский научный журнал), 4(2), 22-26.
6. Baymuradov, R. R. (2020). Teshaev Sh. J. Morphological parameters of rat testes in normal and under the influence of chronic radiation disease. American Journal of Medicine and Medical Sciences.–2020.-10 (1)–P, 9-12.
7. Teshaev, S. J., & Baymuradov, R. R. (2021, January). Characteristics of the anatomical parameters of the testes of white outbred rats in normal conditions and under chronic irradiation. In Archive of Conferences (pp. 61-62).
8. Баймурадов, Р. Р. (2021). Морфофункциональное состояние семенников при остром и хроническом радиационного облучении (обзор литературы). Биология и интегративная медицина, (4 (51)), 4-23.
9. Баймурадов, Р. (2021). Анатомические и физические параметры развития крыс и их семенников после облучения. Общество и инновации, 2(2/S), 504-509.
10. Radjabovich, B. R., & Jumayevich, T. S. (2021). Characteristics of Anatomical Parameters of Rat Testes in Normal Conditions and Under Irradiation in the Age

Aspect. International Journal of Trend in Scientific Research and Development, March, 106-108.
11. Rajabovich , B. R. (2022). Impact of Radiation on Male Reproductive System. Miasto Przyszłości, 24, 123–126.
12. R.R.Baymuradov. (2022). PARAMETERS OF BLOOD VESSELS OF TESTES OF OUTBRED RATS. https://doi.org/10.5281/zenodo.6525390
13. Teshaev, S. J., Baymuradov, R. R., Khamidova, N. K., & Khasanova, D. A. (2020). Morphological parameters rat testes in normal conditions, with the background of chronic radiating disease and under the influence of an antiseptic stimulator. International Journal of Pharmaceutical Research, 12(3), 4898-4904.