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Title: **COMPARATIVE CHARACTERISTICS OF TESTICULAR APPENDAGES IN NORMAL CONDITIONS AND WHEN EXPOSED TO A BIOSTIMULATOR AGAINST THE BACKGROUND OF RADIATION SICKNESS**

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## COMPARATIVE CHARACTERISTICS OF TESTICULAR APPENDAGES IN NORMAL CONDITIONS AND WHEN EXPOSED TO A BIOSTIMULATOR AGAINST THE BACKGROUND OF RADIATION SICKNESS

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**Abstract:** However, there are practically no works in the literature that would present data of detailed dynamic observation of the indicated persons in the period from the moment of radiation exposure to the onset of severe outcomes, especially in comparison with the results of postmortem morphological studies.

**Keywords:** hypoplastic anemia, biological factors, microdistribution.

### Introduction

We observed two patients who had been exposed in the past for a relatively long time (6 and 12 months) to external  $\gamma$ -radiation, which significantly exceeded the maximum permissible doses (in total, 780 and 200 R). One of the examined subsequently developed acute leukemia, the other - hypoplastic anemia.

In the world, there is a steady trend towards a decrease in the quality of men's reproductive health, which is an important part of the physical and emotional state throughout life [8,10,11].

Reproductive health is a state of complete physical, mental and social well-being, and not just the absence of disease or ailment in all areas related to the reproductive system, its functions and processes.

The reproductive system is a "mirror" (highly sensitive) of the organism, where the nature of reactions to various factors is not specific [1,4,5].

The development of preventive measures for the protection of reproductive health and heredity is currently acquiring special relevance in connection with the increasing adverse effects of a complex of social, environmental and professional factors. Recent studies have shown that the share of the influence of the state of male reproductive health on the reproduction of healthy offspring is more than 50%. At the same time, the frequency of reproductive dysfunctions in men reaches 48% [9]. The reproductive function of men is influenced by social and hygienic factors, the leading of which are the place of

work, occupational hazard and work experience in production, the severity of labor, low per capita income, education and marital status. Among the medical and biological factors, the main ones are congenital defects of the reproductive system, past diseases and their complications. A significant role belongs to the way of life and environmental factors, the share of influence of which, according to WHO estimates, can reach 50 and 18-20%, respectively [7].

In the era of scientific and technological development, of all the polluting environmental factors, radioactive radiation (pollution) is considered especially dangerous, the sources of which are not only natural factors, but also, to a greater extent, anthropogenic activity [4]. Complex treatment not only contributes to the survival and recovery of patients with the manifestation of acute radiation sickness, but also makes it possible to minimize the long-term consequences of the incorporation of radioactive substances. The magnitude of the dose received by the body from internal radiation is determined by the pathways and rhythm intake of individual radionuclides into the body, their chemical and physical properties, macro- and microdistribution, ways and rate of excretion from various organs and tissues. Radioactive nuclides can enter the body by inhalation, through the digestive tract, damaged (burn, wound) and intact skin.

The inhalation route is often the main route. This is due to the fact that when ejected, the bulk of the products of a nuclear explosion (UNE) have a dusty form. In addition, the

extremely high resorbing properties of the lungs play a fatal role (the surface of the alveoli is approximately 50 times larger than the surface of the skin). Part of the radionuclides is removed mechanically with exhaled air, part is deposited in the lungs. A smaller proportion of the deposited radionuclides are transferred to the gastrointestinal tract by the movement of the ciliated epithelium. Other particles can be resorbed into the blood. When insoluble compounds enter the lungs, their bulk passes into the pulmonary lymph nodes and lingers there for a long time.

When entering through the digestive tract (with water, food, swallowing sputum), most of the soluble compounds of nuclides are resorbed in the small intestine, a smaller part in the stomach. Insoluble compounds are absorbed slightly and after 40 hours are excreted from the gastrointestinal tract. Absorption through intact skin is up to 1% of the radionuclides on the skin. This process is activated if the skin is moistened with sweat or moistened with hot water. Through damaged skin (wounds, burns, abrasions, microtrauma), the absorption of radionuclides increases sharply. Soluble radioactive substances are carried throughout the body by the blood and lymph. At the same time, a significant amount of radionuclides is deposited in organs rich in reticuloendothelial tissue (liver, spleen, lymph nodes, bone marrow). In addition, depending on the type of radionuclides, the latter are selectively deposited in various organs (brain and spinal cord, bone tissue, kidneys, endocrine organs, etc.). Radioactive substances can be excreted from the body with exhaled air, sweat, urine, feces.

A number of oncological diseases can occur with damage to the spine, both primary and secondary. This, in turn, causes a clinical picture similar to the symptoms of dorsopathies, but requiring a completely different treatment tactics. Latent course of oncological diseases, lack of proper medical examination of the population, under-examination, at first glance, "light" patients can lead to serious diagnostic errors, and as a result, to improper treatment, with all the ensuing

irreparable consequences for the patient's health. Such patients at any time can be seen by a specialist dealing with the management of vertebral neurological patients (chiropractors, reflexologists, osteopaths, etc.). This should always be remembered by both beginners and experienced doctors. This is what the authors of this article focus on. It presents the features of the clinical picture and pain syndrome of the most common tumors and its distinctive features in dorsopathies. This information, as well as the clinical cases considered in the work, will allow the specialist to suspect a possible oncological background of the patient's pain syndrome and recommend an additional examination to avoid serious medical errors.

The effect of ionizing radiation significantly disturbs the balance of metabolism, which maintains the integrity of structures and homeostasis in the cells of various tissues of the body. Of all the organs of the male reproductive system, the testis and epididymis are the so-called universal experimental organs, where the influence of factors, to one degree or another, can be studied quickly and clearly for preliminary reports and also for long-term results. Moreover, according to modern concepts, the epididymis is an accessory gonad, in which the final maturation and accumulation of mature sperm takes place [6]. And the development of radiation-biochemical effects is more pronounced in the radiosensitive tissues of the body, which include the tissue of the spermatogenic epithelium.

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