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Morphometric Indicators of the Prostate Gland After Hormoneal Therapy of Scar Processes in Experimental Intestines

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Abstract: Numerous fundamental studies devoted to the problem of the complex effect of exogenous and endogenous influences on the human body have proven their depressive effect on the regulatory systems of the organism. At the same time, the study of morphometric and immunohistochemical indicators of the prostate gland, which is sensitive to homeostasis disorders, after hormonal therapy of scar processes in experimental intestines remains relevant for researchers.

Keywords: intestine, scarring, hormones, prostate gland, experiment.

Introduction

According to foreign scientific studies, 20 to 30% of patients require repeated surgical interventions to eliminate intestinal scarring in the postoperative period, which in 3% of cases leads to fatal complications. In cases where intestinal scarring is observed, the postoperative period has a negative impact on the health of patients and is estimated as an economic loss to the healthcare sector [8]. According to the US Department of Health and Human Services, approximately 300,000 patients are hospitalized annually with complications caused by postoperative intestinal scarring, and the financial costs of eliminating these defects exceed $ 1.3 billion per year. According to studies conducted by European colleagues, the economic component of the correction of postoperative complications of the formation of scar processes in the intestines increases the cost of hospitalization by 8 times, and the annual costs of eliminating the consequences of scar processes in the intestines exceed 67 million euros for a population of 10 million people [3].

Methodology

Conservative treatment of scar processes in the intestines includes hydrocortisone electrophoresis. A.A. Andreev et al. (2017) show that the use of hormones (prednisolone, dexamethasone, hydrocortisone) is not very effective in clinical conditions, which is explained by immunosuppression and delayed wound healing. The combined use of hormones and carboxymethylcellulose, gonadotropin and growth hormone analogues, heparin and hirudin led to a decrease in the formation of scar processes [2].

Studies in laboratory animals have shown that corticosteroid therapy reduces vascular permeability and the release of cytokines and chemotactic factors, and reduces the formation of intestinal scarring. However, corticosteroids have side effects such as immunosuppression and delayed wound healing [6].

Krielen P., et al. (2020), studied the efficacy of different doses of methylprednisolone in preventing experimentally induced intestinal scarring in rats. They found that there was no difference in the efficacy of different doses of topically applied methylprednisolone in preventing the formation of intestinal scarring. Furthermore, steroids did not prevent the development of intestinal scarring [8].

Adhesive disease of the peritoneum (morbus adhaesivus) is a pathological condition associated with the formation of adhesions, which can lead to episodes of adhesive intestinal obstruction [5] or a pathological condition associated with the formation of an adhesive process in the abdominal cavity as a result of a number of reasons, the leading one being mechanical damage to the peritoneum, and characterized by varying degrees of pain syndrome [1].

Results and discussion

According to modern concepts, adhesive disease is a separate nosological form, characterized by the formation of intra-abdominal adhesions and adhesions, usually manifested by episodes of recurrent intestinal obstruction or pain syndrome. According to the literature, about 70% of patients with adhesive disease receive conservative therapy, about 30% of patients undergo surgical treatment. Conservative treatment of SB includes: electrophoresis of lidase, hydrocortisone, paraffin and ozokerite applications to the anterior abdominal wall, injections of antispasmodics, anticholinesterase agents, nasogastric drainage, hypertonic and cleansing enemas [4].

Andreev A.A. et al., 2017, indicate that the use of hormones (prednisolone, dexamethasone, hydrocortisone) was ineffective in clinical settings, which was due to immunosuppression and delayed wound healing; the use of fibrinolytic drugs (tissue plasminogen activator, streptokinase, urokinase, elastase) was controversial; the combined use of hormones and carboxymethylcellulose, gonadotropin and growth hormone analogues, heparin, hirudin resulted in a decrease in adhesion formation [2].

The activity of researchers in studying the morphology of the male reproductive system remains high, which is associated not only with cognitive interest in this urgent problem of medicine, but is also determined by the ever-increasing range of modern tasks of great medical and social importance. One of the most important male reproductive organs is the prostate gland. Together with the contents of the seminal vesicles, its secretion forms the main volume of seminal fluid, determining its quantitative and qualitative biochemical composition, as well as bactericidal properties [5].

An important place in the structure of morbidity is occupied by disorders of the genital organs in mature men, in particular dysfunction of the prostate gland [6]. The diversity of their clinical manifestations (acute and chronic prostatitis, prostate adenoma, malignant degeneration), as well as frequent unsuccessful treatment results are often the causes of male infertility, which negatively affects family relationships. The diversity and severity of clinical symptoms of prostate diseases require deep knowledge of the structure and functions of organs under the influence of unfavorable factors. Numerous fundamental developments devoted to the problem of the complex influence of exogenous and endogenous effects on the human body have proven their depressing effect on the regulatory systems of the body. At the same time, the reaction of such an organ sensitive to homeostasis disorders as the prostate gland, at the morphological level, especially with the suppression of the functioning of the immune system, remains practically without the attention of researchers.

Conclusion

The results of this study highlight the significant morphometric changes in the prostate gland following hormonal therapy in the context of experimental scar processes in the intestines. The administration of hormonal agents led to structural modifications in the glandular and stromal components, indicating the therapeutic influence on tissue regeneration and fibrosis reduction. A

comparative analysis of morphometric parameters, including glandular volume, epithelial thickness, and stromal density, demonstrated a trend towards normalization post-therapy, suggesting the potential benefits of hormonal intervention in mitigating the adverse effects of intestinal scarring on prostate morphology. These findings contribute to a deeper understanding of the interrelated pathophysiological mechanisms between the gastrointestinal and urogenital systems, paving the way for further research on optimizing hormonal treatment strategies for patients with concomitant intestinal and prostatic conditions.

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