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Morphological Parameters of the Spleen After Hormonal Therapy of Intestinal Scar Processes

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The immune system makes a significant contribution to maintaining human health. Numerous studies have shown that immunity determines the body's resistance to infectious factors. Of particular interest is the spleen as an immune organ, since the human and animal immune system is one of the most sensitive systems in the body, quickly responding to any impact.

The spleen, being a key organ of the peripheral part of the immune system, performs three main functions: removing damaged, old, defective blood cells and circulating microorganisms from the bloodstream, initiates immune responses to antigens (in the form of formation of antibodies to polysaccharide antigens), and ensures extramedullary hematopoiesis in the fetal period or after birth in conditions of medullary hematopoiesis deficiency. Thus, the spleen plays a significant role not only as an organ of fetal hematopoiesis, but also as a site of sequestration and destruction of cells. The macroscopic structure of the spleen is determined by the structure of its vascular bed, primarily by the nature of the branching of the arteries. The features of the histophysiology of the spleen are associated with its unique blood supply.

The immune formations of the spleen have a more complex anatomical structure, compared to that of other peripheral organs of the immune system. Cellular and non-cellular components of the blood are subject to immune control in the spleen. Blood components that are genetically damaged, do not correspond to the immune state of the body, are recognized and removed from the bloodstream. In the red pulp (which is sometimes called the "graveyard of red blood cells"), their destruction occurs. Analysis of literature data showed that both stress and other damaging factors lead to morphofunctional changes in the spleen at the organ, tissue, cellular and molecular levels. The reaction of immune structures consists of redistribution of the ratio of lymphocyte-macrophage elements of the organ parenchyma and changes in the structure of microvessels in response to the effect of the factor. The nature and degree of expression of changes depend on the intensity of the factor and the time after its cancellation. The data accumulated to date in the scientific literature on morphofunctional transformations of the structural components of the spleen dictate the need to expand studies of the influence of environmental factors on the largest peripheral lymphoid organ, which is the spleen, which controls the immune response in physiological and pathological conditions.

Conclusion

The study demonstrates that hormonal therapy significantly influences the morphological parameters of the spleen following intestinal scar processes. Morphometric analysis revealed notable changes in spleen structure, including alterations in lymphoid follicle size, trabecular thickness, and white pulp distribution. The observed modifications suggest an adaptive response to hormonal intervention, potentially linked to immune regulation and tissue remodeling processes. These findings indicate that hormonal therapy may contribute to restoring spleen morphology and function, which could be beneficial in managing systemic effects associated with intestinal fibrosis. Further research is needed to explore the long-term implications of such treatments on immune homeostasis and overall physiological balance.