



Histological Patterns of Antigenosis Differences of Lymphoid Structures of the Postnatal Ontogenesis

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Abstract: Currently, research in theoretical and clinical immunology has made significant progress. Due to the considerable development of these scientific directions and their realization in practical medicine the interest in studying structural and functional features of different organs and systems in general is understandable. Numerous publications that have appeared in recent years reflect various aspects of morpho-physiology of central and peripheral organs of immune system. A significant part of scientific achievements is in demand in practice and has been realized in investigations of immunomorphology and ultrastructure of lymphoid organs in norm, experiment and pathology. The achieved success provides a better understanding of individual characteristics of immune system in norm, pathology, primary and secondary immunodeficiency, so common nowadays. The scientific data obtained in recent years contribute to a better understanding of the cellular basis of immunity, the mechanisms of immunological recognition and the nature of intercellular interactions in the formation of the immune response.

Key words: histological features, antigenicity, differentiation, lymphoid structures, small intestine, postnatal ontogeny.

Introduction. Exposure to adverse environmental and anthropogenic factors causes increased mobilization of all systems that provide homeostasis of the body. The duration of such exposure often leads to structural and functional changes in organs, reduction of general resistance and development of diseases, especially in pregnant animals, disturbance of intrauterine development of fetus, increased death of newborns. An objective characteristic of animal viability at different stages of ontogenesis is of great importance.

Under certain conditions, the developing foetus may be significantly impaired in the development of the organs and systems that carry out the processes of adaptation. The organs of the peripheral immune system - lymph nodes, lymphoid structures of the intestine, respiratory and urinary systems, and the spleen - play an important role in providing this protection. The lymphoid tissue of the wall of the

small intestine, is subjected to its first antigenic exposure. The immunological activity of the organism as a whole depends on its structural development and functional state, especially in the early stages of ontogenesis. The processes of peripheral immune system morphogenesis have a phase course. By the time of birth its structural components are not morphologically and functionally mature. Their final formation occurs in the first month of life and reaches its "peak" during the first half of life. The need for information about the peculiarities of development of the body's protective structures at different stages of life is caused by the need for prevention and subsequent correction of emerging age-related pathology. It is now physiologically well established that there is a functional mother-fetus system in which there is a strict correlation between the state of the mother's body and the development of the structural components of the fetal body's major systems. Numerous studies have shown that diseases occurring during different periods of postnatal ontogenesis are the result of disorders in pregnant females. Unfavourable conditions in which the mother is during the "laying" and differentiation of lymphoid structures, the spleen significantly affects the "quality" of their subsequent functioning. This can be a prerequisite for the development of immunodeficiency in the future offspring. There are a lot of scientific works devoted to the great importance of early postnatal ontogenesis period for morphofunctional differentiation and formation of organs and systems of the future organism, as violation of formation and formation of organs and systems in ontogenesis is a possible cause of various congenital pathologies. In the processes of development of tissue organ structures a great role is given to their local regulatory structures. Study of morphology of regulatory (endocrine and immune) structures, their integrative and adaptive role on organism functions during formation in postnatal ontogenesis attracts attention of scientists from all over the world. Despite the establishment of general patterns of development of the organs of the digestive system, the views on the formation of the small intestine and its regulatory structures in early postnatal ontogeny are insufficient. To date, questions concerning the study of the sequence of morphofunctional formation of tissue and regulatory structures of the small intestine, the features of their joint activity are fragmentary. Morphological and morphometric features of cells of the diffuse endocrine apparatus and formation of the main immune structures of the digestive tract in early postnatal ontogenesis in animals are supposed to exist.

The close relationship between the maternal and fetal organisms in the FSMP allows the early prevention of immunodeficiency states by administering biologically active preparations to pregnant animals. Immunocorrection can be carried out with different substances, but of all drugs, according to many researchers, the use of drugs of biological origin deserves the most attention, as they are physiological and harmless to the body. In addition to their specific action, almost all immunomodulators have a number of identical pharmacological effects: activation of tissue regeneration processes; manifestation of adaptogenic and growth-stimulating action; antitoxic effect; increase of immune response during vaccination. There is a positive experience in practical application of nucleic substances of this group as immunocorrectors also in young animals.

Conclusions: thus, the peculiarities of the action of these preparations on the development of the structural components of individual systems providing protective functions in litter, when administered to pregnant females, are not sufficiently elucidated and require more detailed study.

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