

MORPHOFUNCTIONAL FEATURES OF IMMUNE SYSTEM OF POULTRY

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The article analyzes literary data on the peculiarities of the phylogenetic development of the immune system and the mechanism of the formation of the immune response in the poultry. In birds, as well as in mammals, the organs of the immune system for the morphofunctional values are divided into central and peripheral. The central organs of the immune system of the poultry, in addition to bone marrow and thymus, also include the cloacal bursa (Fabricius burse), in which the ripening of B-lymphocytes occurs. The absence of a lymphatic system with numerous nodes in most poultry species is compensated by scattered throughout the body clumps of lymphoid tissue, able to actively respond to any antigenic stimulus.

According to the opinion of number of scientists, lymph nodes are found in geese, ducks and flamingos and are represented by two pairs: sterno-cervical and transversal. In domestic geese and ducks only paired sterno-cervical lymph nodes are detected while transversal nodes are absent. They are formed morphologically by connective tissue stroma (capsule and trabeculae), parenchyma and sinus. Parenchyma cortical substance is represented by diffuse lymphoid tissue and secondary lymphoid nodules, and medullary substance — by only diffuse lymphoid tissue. There is only central sinus in lymph nodes.

The protection of the poultry embryo from the influence of numerous environmental factors is carried out by egg's hard shell, shells and a significant layer of protein, in the center of which is the yolk. In the early stages of embryonic development, the primary protective role is performed by phagocytes. It has been proved that many young embryonic cells have phagocytic activity. As the embryo develops, the macrophage activity is concentrated in the liver, spleen, kidneys, bone marrow and other parts of the tissues, which rich in cells of the reticuloendothelial system.

The main blood cells that protect the body from infectious factors, toxic effects are pseudo-eosinophils, which are actively involved in the process of phagocytosis. In the process of poultry embryonic development, cells that synthesize Ig M appear first,

and cells that can synthesize IgG appear before the hatching in the lymphoid tissue of the embryo. The synthesis of IgA begins at the early period of the bird post-embryonal development.

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