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STUDY OF PATHOMORPHOLOGICAL CHANGES IN THE LIVER DURING IMMUNIZATION OF RABBITS WITH THE LIVE VACCINE STRAIN BRUCELLA ABORTUS 19

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Immunopathological reactions developing during vaccination against brucellosis are of great importance for obtaining diagnostic sera and assessing the safety of vaccine strains. The spleen is a central organ of the immune and reticuloendothelial system and plays a key role in antigen presentation, lymphocyte proliferation, and the formation of humoral and cellular immunity, which determines the need to study its morphological changes during immunization.

The aim of the study was to investigate pathomorphological changes in the spleen of experimental rabbits immunized with the live vaccine strain *Brucella abortus* 19.

The study included 12 rabbits weighing 3.0–3.5 kg divided into four groups. Immunization was carried out four times according to different schemes (with and without incomplete Freund's adjuvant). The vaccine was administered subcutaneously and intramuscularly at a total dose of 1.6 ml. After completion of immunization, agglutinating antibody titers were determined and histological examination of the spleen was performed using hematoxylin–eosin staining. Serological studies demonstrated a significant increase in specific antibody titers, with the highest level (1:6400) observed in animals immunized with the vaccine combined with incomplete Freund's adjuvant, indicating potentiation of the immune response due to prolonged antigen release and activation of both cellular and humoral immunity.

Histological examination of the spleen revealed preservation of the general organ architecture with pronounced immunomorphological changes. Marked hyperplasia of white pulp structures was observed, including enlargement of lymphoid follicles with clearly expressed germinal centers and expansion of periarteriolar lymphoid sheaths. Increased numbers of lymphocytes, plasma cells, and macrophages were detected in both white and red pulp. Activation of macrophages and sinusoidal histiocytosis, moderate congestion of red pulp sinusoids, and the formation of small epithelioid cell microgranulomas were noted. These changes were reactive and focal in nature and were not accompanied by destructive alterations or extensive necrosis.

Thus, immunization with the live *Brucella abortus* 19 vaccine induces a pronounced immune response and is accompanied by moderate reversible pathomorphological changes in the spleen, confirming the immunogenicity and safety of the vaccine strain for the production of diagnostic sera.

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