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**POSTNATAL MORPHOGENESIS OF MESENTERIC LYMPH NODES IN
OFFSPRING BORN TO FEMALE RATS WITH EXPERIMENTAL DIABETES
MELLITUS**

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Background. Maternal diabetes mellitus is an important factor that may adversely affect the development and functional maturation of the immune system in offspring. Maternal hyperglycemia during pregnancy can influence the formation of lymphoid organs and may have long-term consequences for immune homeostasis after birth. Mesenteric lymph nodes (MLNs) are essential peripheral lymphoid organs involved in intestinal immune surveillance and the regulation of mucosal immune responses. Therefore, investigation of their postnatal development under conditions of maternal diabetes is of particular scientific interest.

Objective. To investigate the morphological features and postnatal development of mesenteric lymph nodes in offspring born to female rats with experimentally induced diabetes mellitus.

Materials and Methods. The study was conducted on offspring born to female rats with experimentally induced diabetes mellitus. Offspring of intact healthy females served as the control group. Mesenteric lymph nodes were examined at different stages of the postnatal period. Histological examination was performed to assess the general structural organization of the lymph nodes, development of the cortical and medullary regions, formation of lymphoid nodules, and cellular composition. Morphometric analysis was used to evaluate changes in the structural components of the lymph nodes during postnatal development.

Results. Offspring born to diabetic female rats demonstrated alterations in the rate and pattern of postnatal development of the mesenteric lymph nodes compared with control animals. During the early postnatal period, differences were observed in the development of the cortical and medullary compartments and in the formation of lymphoid nodules. At later stages, morphological differences persisted and were reflected in changes in the proportions of the structural components and cellular organization of the lymphoid tissue. These findings indicate that maternal hyperglycemia may affect the normal maturation of peripheral lymphoid organs and modify the postnatal development of intestinal immune structures.

Conclusion. Maternal experimental diabetes mellitus is associated with changes in the postnatal morphogenesis of mesenteric lymph nodes in offspring. The observed morphological alterations suggest that maternal hyperglycemia may influence the maturation of structural and functional compartments of the lymph nodes and may represent a mechanism of prenatal programming of the offspring's immune system.