

Pathways and Mechanisms of Lymphocytes Emigration from Newborn Thymus

Authors : Olena Grygorieva

Abstract : Nowadays mechanisms of thymocytes emigration from the thymus to the periphery are investigated actively. We have proposed a hypothesis of thymocytes' migration from the thymus through lymphatic vessels during periodical short-term local edema. By morphological, histochemical methods we have examined quantity of lymphocytes, epithelioreticulocytes, mast cells, blood and lymphatic vessels in morpho-functional areas of rats' thymuses during the first week after birth in 4 hours interval. In newborn and beginning from 8 hour after birth every 12 hours specific density of the thymus, absolute quantity of microcirculatory vessels, especially of lymphatic ones, lymphocyte-epithelial index, quantity of mast cells and their degranulative forms increase. Structure of extracellular matrix, intrathymical microenvironment and lymphocytes' adhesive properties change. Absolute quantity of small lymphocytes in thymic cortex changes wavy. All these changes are straightly expressed from 0 till 2, from 12 till 16, from 108 till 120 hours of postnatal life. During this periods paravasal lymphatic vessels are stuffed with lymphocytes, i.e. discrete migration of lymphocytes from the thymus occurs. After rapid edema reduction, quantity of lymphatic vessels decrease, they become empty. Therefore, in the thymus of newborn periodical short-term local edema is observed, on its top discrete migration of lymphocytes from the thymus occurs.

Keywords : lymphocytes, lymphatic vessels, mast cells, thymus

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