

S.A.Sherstiuk

V.N. Karazin Kharkiv
National University

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INFLUENCE OF MOTHER HIV INFECTION ON PANCREAS DEVELOPMENT OF THE FETUS

The study was conducted as a part of research work "Pathomorphological features of fetus and newborn formation under the influence of maternal pathology" (state registration number 0110U001805).

ABSTRACT. Background. Current stage of HIV infection is characterized by a significant increase in the incidence of infection among women of reproductive age and pregnant women. Consequently it will lead to the complex of problems related to the health of children born to them. **Objective.** To identify the impact of HIV infection of the mother on the formation of the pancreas of the fetus. **Methods.** Pancreases were measured and weighed. Histological sections were stained with hematoxylin and eosin, Van Gison and Mallory methods. Immunohistochemical examination was performed using the indirect method of Coons in modifications of M.Brosman. α - and β -cells were detected using monoclonal antibodies to glucagon and insulin. Immunohistochemical study was carried out in the luminescent microscope «Axioskop 40" using the software Biostat.exe. All digital data is processed by methods of mathematical statistics using variations, alternative and correlation analysis. **Results.** Analyzing the morphometric parameters of the pancreas of stillbirths from HIV-infected mothers, comparing them with the control group we found a massive expansion of the stroma on the background of decreasing both quantitative and qualitative composition of the islets of Langerhans, as well as a violation of the ratio of populations α - and β -cells in the direction of decreasing β -endocrine cells (1: 1.47). The latter ratio is known to play a leading role in the development of the endocrine pancreas dysfunction. Decrease in the density of Langerhans islets due to the growth of the stroma by the newly formed interlobular and intralobular connective tissue, as indicated by stromal-parenchymal ratio of the organ, as well as reducing of the diameter of the island and the number of endocrine cells in it. β -cells of the islets of Langerhans of children of M group had evidences of functional inhibition manifesting in reducing of the cellular diameter and increase of nuclear/cytoplasmic ratio, decrease in the intensity of β -cells luminescence. **Conclusion.** Immunohistochemical study of pancreatic stillbirths from HIV-infected mothers showed a decrease in the intensity of luminescence of β -cells in sections treated with mAb to insulin, which was the strong evidence of their functional inhibition.

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✉ sherstyuk-sergey@rambler.ru

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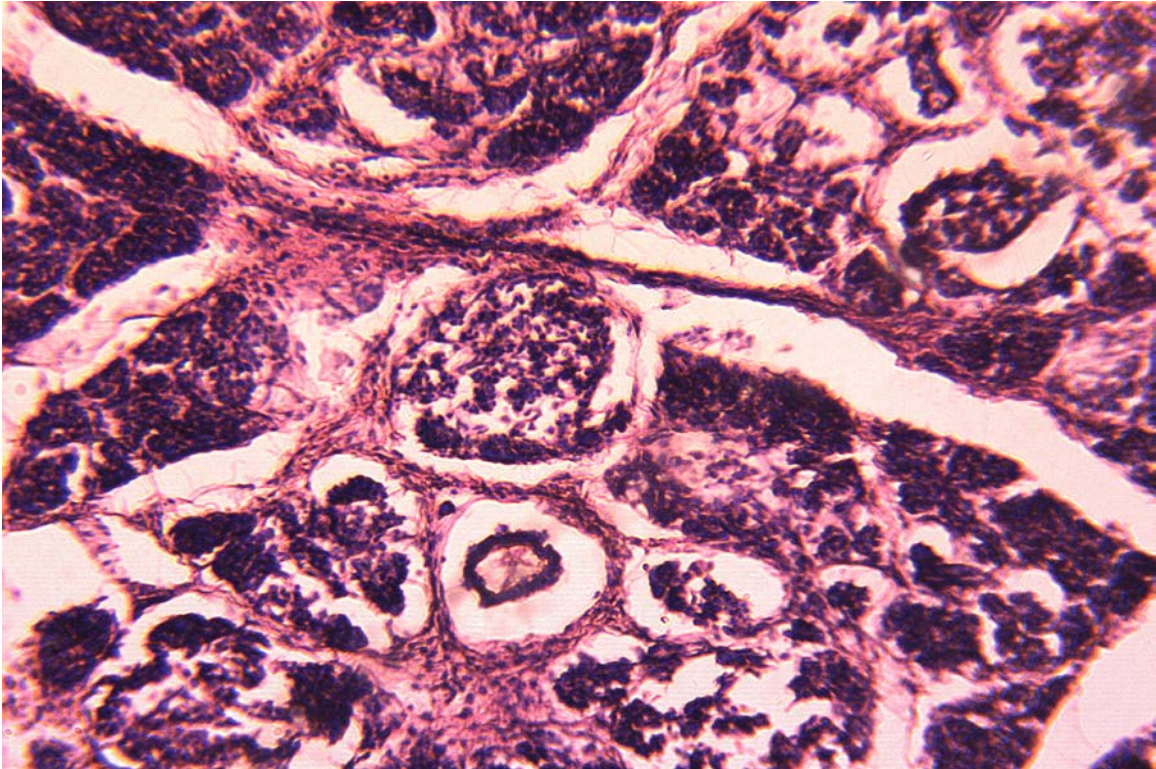


Fig. 1. Group M – pancreas. Great volume of the acinar apparatus on the background of the acinar cells hypotrophy. Hematoxylin&Eosin staining. $\times 100$.

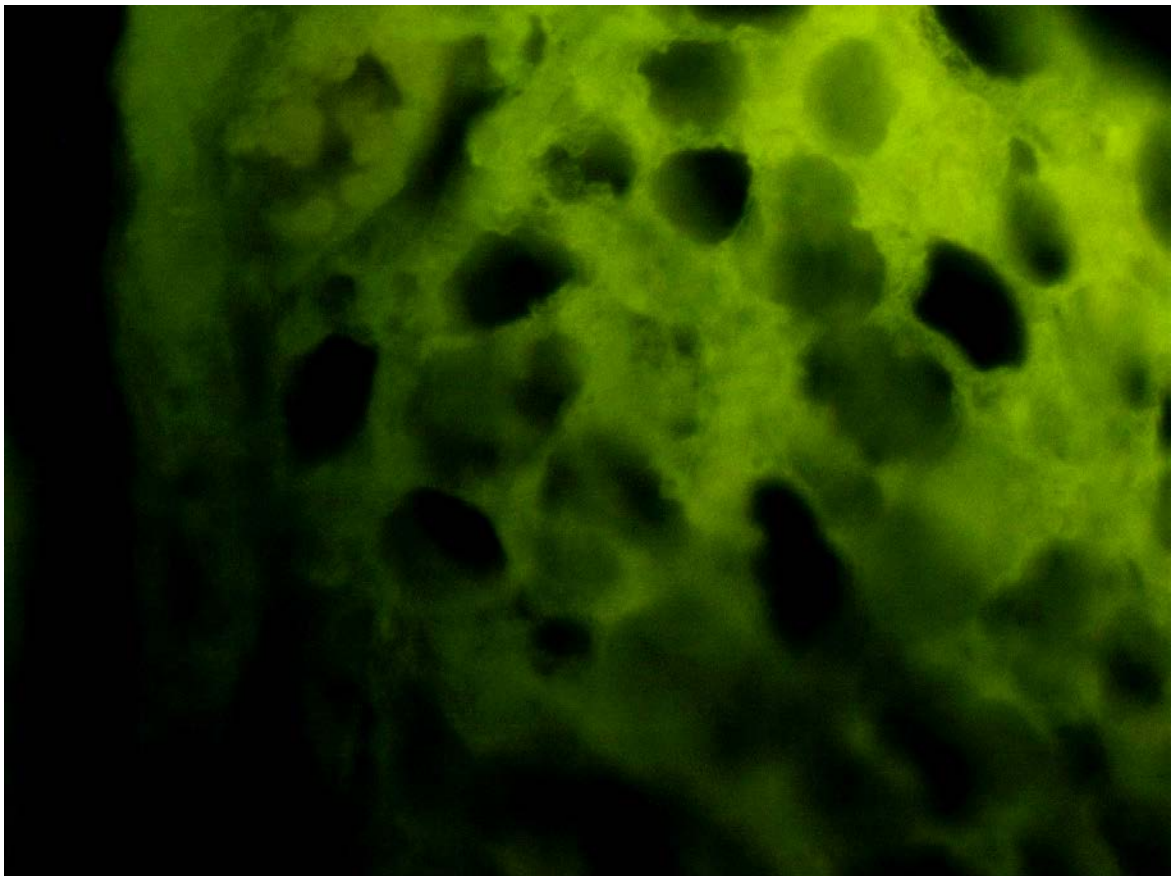


Fig. 2. Specific luminescence of the insulin in the pancreatic β -cells cytoplasm in group M in preparations processed with monoclonal antibodies to insulin. Direct Coons method with monoclonal antibodies to insulin. $\times 600$.

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