

FEATURES OF THE REPRODUCTIVE SYSTEM IN WOMEN WITH DIABETES MELLITUS

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ANNOTATION

Modern histological studies of pancreatic tissue in patients with diabetes mellitus have revealed changes in its structure. In patients with hyperglycemia, there is a decrease in the number of pancreatic cells, dystrophic changes in beta cells, changes in the composition and number of specific granules, degranulation of immunocytes. There is an alternation of atrophic and compensatory hypertrophied islets of Langerhans.

Keywords: edema, vessels, diabetes, sclerosis, electron microscopy.

INTRODUCTION

Edema is found around the vessels and small capillaries, and congestion in the vessels. Macroscopically, patients with diabetes may experience a decrease in the size of the pancreas, lipomatosis and sclerosis. However, in many cases, the tissue is not changed, and only electron microscopy and immunohistochemical studies can detect signs of a pathological process.

Since this disease is associated with metabolic disorders, changes are also found in other tissues and target organs: hepatomegaly, lipid deposition in liver cells, generalized macroangiopathy (atherosclerosis of the vessels of the kidneys, retina, brain, peripheral nervous system, etc.), microangiopathies caused by plasma sweating through damaged areas of the basement membrane, combined with endothelial proliferation and infiltration of the vascular walls by immunocompetent cells.

These changes in the vessels contribute to the development of diabetic glomerulosclerosis and nephropathy, as well as the thickening of the basement membranes of the lung hemocapillaries and narrowing of their lumen [4, 5].

The pathological process also affects the thyroid gland, in which a local or diffuse increase in connective tissue elements, dystrophic and atrophic processes, a decrease in the number and flattening of thyrocytes, deformation of their nuclei, an increase in the viscosity of the colloid, atherosclerosis and calcification of large blood vessels (macroangiopathy), plasma impregnation vessels of the microvasculature and perivascular edema (microangiopathy). These pathomorphological changes indicate the suppression of the thyroid gland function.

Today, there is a tendency towards an increase in the number of persons of reproductive age with chronic diseases. According to statistics, diabetes mellitus is one of the most common chronic diseases on the planet. According to the estimates of the International Diabetes

Federation, more than 425 million people worldwide have this diagnosis, that is, diabetes occurs in 1 out of 11 adults, while about 70% of them are of working age [9].

The reasons for the development of diabetes mellitus are varied: it is the destruction of beta cells of the pancreas due to autoimmune reactions, and their genetic defects (mutations of the nuclear factor of hepatocytes 4 α , 1 α , 1 β , glucokinase, insulin gene, mitochondrial DNA, which is manifested as inherited through the mother diabetes and deafness syndrome, etc.), as well as chronic pancreatitis, hemochromatosis of the pancreas, infections (cytomegalovirus, Coxsackie B virus), impaired tissue sensitivity to the action of insulin, and many others.

Despite the differences in etiological factors and pathogenetic mechanisms, obstetric and other complications arising in all types of diabetes are similar, as are the causes of disability and death of patients.

Pregnancy and childbirth are associated with changes in all types of metabolism, which cannot but affect the course of the underlying disease in patients with diabetes. The need for all substances necessary for plastic processes increases, which is manifested by the intensification of protein, lipid and carbohydrate metabolism.

Glucose is the main energy substrate that is used for synthetic reactions in the body of the fetus and mother [4]. With an increase in gestation, energy requirements are constantly increasing, which requires changes in the regulatory mechanisms in order to maintain sufficient glucose levels. From the 12th week of pregnancy, the placenta begins to actively function, which is accompanied by an increase in the level of estrogen, progesterone, prolactin and placental lactogen, as well as an increase in the synthesis and secretion of cortisol and growth hormone [13].

Violation of the rheological properties of blood is manifested by hypercoagulation and hyperaggregation, which, on the one hand, are due to the activation of the platelet link characteristic of diabetes, and on the other, the occurrence of DIC syndrome is associated with a decrease in the effect of anticoagulant mechanisms: antithrombin AIII and the fibrinolytic system, which is observed in physiological conditions during pregnancy [22].

Maternal hyperglycemia interferes with placental formation and angiogenesis. Patients with diabetes mellitus have hyperplasia of the placenta with the formation of additional lobes or annular placenta, which leads to its premature maturation, calcification and aging, and, consequently, to a violation of its functions: barrier, transport, synthetic, endocrine, gas exchange, excretory. Violation of blood flow in the system "mother - placenta - fetus" is due to the formation of a single a. umbilicalis, formation of arterio-arterial anastomoses and impaired transformation of aa. spirales [13, 21].

The consequence of this is chronic fetal hypoxia with redistribution of blood flow to the central nervous system and the formation of an asymmetric variant of intrauterine growth retardation. Changes in hemodynamics and abnormalities in the formation of the placenta lead to the development of placental insufficiency and miscarriage. It was found that in 20% of patients of fertile age with diabetes, pregnancy does not occur for 2 years or more, which is associated with dysfunction of the hypothalamic-pituitary system (decreased production of FSH, LH, thyroid stimulating hormone and prolactin), impaired carbohydrate metabolism, decreased thyroid function and the development of obesity [7, 8, 23]

Other common complications in women with diabetes during gestation are preeclampsia and eclampsia, severe forms of preeclampsia, exacerbation of the underlying disease with the development of progressive diabetic retinopathy, glomerulosclerosis, polyneuropathy, ketoacidosis, weakness of labor, early postpartum delivery, and heavy bleeding period, inflammatory diseases of the genitourinary system, and death is also possible [24–26].

CONCLUSION

Thus, we can conclude that diabetes mellitus is a threat to the life and health of the mother and fetus. Patients should be informed about the need for pregravid preparation, which consists in referring to an endocrinologist's consultation to resolve the issue of the possibility of carrying a pregnancy, stabilizing the level of glycemia and clarifying the complications of diabetes, repeated comprehensive examination and hospitalization in case of pregnancy, which will reduce the risk of complications and perinatal death.

LITERATURE

1. Kumar V., Abbas A.K., Fausto N., Astaire J.K. Fundamentals of pathology of disease according to Robbins and Cotran, trans. from English E.A. Kogan, R.A. Serov et al. Volume 3. M.: Logosfera, 2016. S. 1254-1257.
2. Global report on diabetes. Geneva: World Health Organization, 2018. [Electronic resource]. URL: <https://www.who.int/diabetes/global-report/ru/> (date of access 09/01/2020).
3. Shostrom D.C.V., Sun Y., Oleson J.J., Snetselaar L.G., Bao W. History of Gestational Diabetes Mellitus in Relation to Cardiovascular Disease and Cardiovascular Risk Factors in US Women. *Frontiers in Endocrinology*. 2017. Vol. 26. no.8. P.144.
4. Cronenberg GM, Melmed Shlomo, Kenneth S. Polonsky Williams *Endocrinology: Reproductive Endocrinology / Per.* from English. ed. I.I. Dedova. M.: GEOTAR-Media, 2018.S. 315-440.
5. Malyshkina A.I., Batrak N.V. Features of the gestational period and perinatal outcomes in women with gestational diabetes mellitus // *Bulletin of IvGMA*. 2014. No. 1. S.27-29.
6. Cheremkin M.I., Grigorenko A.A. Pathomorphological changes in the thyroid gland in type 2 diabetes mellitus // *Far Eastern medical journal*. 2011. No. 1. S. 16-18.
7. Wang Ch. The Relationship between Type 2 Diabetes Mellitus and Related Thyroid Diseases *Journal of Diabetes Research*. 2013. [Electronic resource]. URL: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3647563/> (date accessed: 09/01/2020).
8. Amanova Nodirabegim Furkatovna. (2022). EFFECTIVE METHOD OF TEACHING. *Conference Zone*, 53–55. Retrieved from <http://www.conferencezone.org/index.php/cz/article/view/124>.