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# MEDICAL SCIENCES

## MORPHOLOGICAL STATE OF THE UTERUS OF OFFSPRING BORN IN CONDITIONS OF DIABETES MELLITUS IN THE MOTHER

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**Relevance.** Diabetes mellitus is one of the pressing problems of modern medicine. Diabetes mellitus is a severe and chronic disease, which is accompanied by severe disturbances of all metabolic processes in the human body, especially in the process of carbohydrate metabolism.

The processes of morphofunctional changes in the internal organs of patients with diabetes mellitus have been sufficiently studied, but morphological changes in the internal organs of children born to mothers with diabetes mellitus are still not fully understood.

**Key words:** experimental diabetes mellitus, offspring, uterus, blood vessels, tissue.

**Purpose of the study.** To study the morphological state of the structural components of the uterus of offspring born under conditions of experimental diabetes mellitus in the mother.

**Material and research methods.** To create an experimental model of diabetes mellitus, female rats were intraperitoneally injected once with alloxan in acetate citrate buffer at the rate of 11 mg%/100 g body weight. Rats in the control group were given an isotonic solution in this amount and ratio into the abdominal cavity. Over 3 days of experiments, male rats were added to the female rats and offspring were selected. The work used general morphological and electron microscopic research methods.

**Research results.** A study of the uterus of 7-day-old intact rat pups showed that all layers were well developed. Synchronicity is determined between the processes of formation of tissue structures and microcirculatory vessels. The wall of the uterus consists of three layers: endometrium (mucous layer), myometrium (muscular layer) and perimeter (serous layer). The mucous membrane of the cervix has thin folds. The endometrial layer consists of 2 layers: the epithelium and the lamina propria. The epithelial layer consists of a single-layer prismatic epithelium, in some places it is multilayered. Epithelial cells consist of ciliated, glandular and basal cells. The lamina propria consists of loose connective tissue. Fibrous structures consist of collagen and elastic fibers.

Elastic fibers are few in number, but they are interconnected and form a network. The uterine wall of a 3-day-old rat pup is predominantly myometrial; the glands of the endometrial layer are not fully formed. The blood vessels in the myometrial layer of the uterus are moderately congested. The myometrium of the uterus is formed by bundles of smooth muscle tissue, between which there are loose connective tissue layers.

The muscle layer in the area of the uterine body consists of 3 clearly defined layers: the inner layer, where the myocytes are arranged circularly; in the middle layer, myocytes have an oblique direction; and outer - distinct longitudinally oriented myocytes. The myometrium in the cervical region forms a circular sphincter, which is associated with the preservation of multiple pregnancy in animals.

Studies of the morphological state of the uterus of the offspring of rats with experimental diabetes mellitus showed swelling and infiltration of mononuclear cells in all layers of the uterine wall. Reactive and dystrophic changes are detected in all layers of the uterine wall.

Intraorgan venous vessels were dilated in places, and the capillaries were tortuous. On the 14th day of postnatal life, due to dystrophic changes in the vascular and tissue structures of the uterine wall, a lag in the development of structural components was observed in comparison with those of intact rat pups. Electron microscopic studies revealed slight swelling and expansion of the intercellular spaces.

**Conclusions.** 1. Diabetes mellitus in the mother leads to the development of inflammatory-reactive and dystrophic processes in the structural components of the uterus of the offspring.

2. The leading role in the development of the identified morphological changes is played by pathological changes in the microvessels of the uterus, which subsequently lead to developmental delays and trophic disorders in tissue structures.

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