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**CRYOPRESERVATION OF OVARIAN TISSUE TO PRESERVE OOCYTES OF EARLY STAGES.**

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**Actuality**: loss of ovarian reserve in the reproductive age is a devastating social and economic phenomenon. The reason for this is the high incidence of cancer of women of reproductive age. After treatment against oncological pathology women occurs premature menopause. Preservation of reproductive potential of these groups of patients is an urgent problem for Reproductive Medicine.

**Aim:** Implement cryopreservation of ovarian tissue of women under 30 years. Conduct in-vitro study to evaluate survival after thawing. Conduct animal-study in 4 laboratory animals (rabbits) to analyze ability of graft to folliculogenesis.

**Materials and methods**: 14 samples of ovarian cortex was obtained from 14 patients with benign ovarian cysts, borderline ovarian tumors, ovarian cancer, cancer of the cervix. The material was frozen by the "vitrification". Before and after the vitrification of ovarian tissue was performed histological analysis with coloring by Hematoxylin-Eosin. Evaluation of survival of follicles was performed by criteria Kuvayama, Keros, Donnez. In the same time were prepared 4 laboratory animals, who created the menopause by bilateral ovariectomy. When the level of estradiol in animals decreased to less than 1.0 pg / ml, with an initial 45.0 + - 7.0 pg / ml, they were transplanted ovarian tissue orthotopically - in the broad ligament of the uterus, the parietal peritoneum of the pelvis, anterior abdominal wall, heterotopically - subcutaneously and in the abdominal wall muscles. Monitoring of grafts is done by ultrasound test, by studies of estradiol (E2), a anti-Mullerian hormone (АМН).

**Results**: Analysis of 155 primary follicles (total of 14 histological staining with hematoxylin-eosin) showed the following results: 6.5% (9 follicles) showed signs of damage after the vitrification-thawing ovarian tissue. Follicle rupture of the basement membrane is fixed in 2.5% (4 follicles), oocyte shrinkage in 4% (7 follicles). Stromal component of the cortical layer of ovarian tissue after thawing on histological examination had identical characteristics in comparison to the state prior to vitrification. Restoration of endocrine function in laboratory animals observed at 3 months - E2 increased to 40.0 + - 3.5 pg / ml. Indicator of ovarian reserve in two animals determined in 2 months: 0.3 and 0.45 ng / ml. After 3.5 months the level of АМН in animals reached 0.7, 1.2, 0.8, and 0.5 ng / ml. An ultrasound test revealed a growth of follicles in the field of transplantation in peritonial cavity. Heterotopical transplantation showed no follicle growth. Animals undergone ovulation stimulation with low doses of gonadotropins (total 300 units of puregon). Response of grafts to gonadotropin stimulation was performed by laparotomy. Noted the presence of follicles ranging in size from 3 to 12 mm.

**Conclusion:** The optimal method of preserving ovarian reserve is a program IVF with cryopreservation of embryos or oocytes, which can not be done in certain cancer patients, in the prepubertal and pubertal period. Cryopreservation of ovarian tissue is a promising method to preserve ovarian reserve for women of reproductive age in need of delaying childbirth.