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P161. Melatonin effects on ovarian tissue cryopreserved transplantation

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CONTEXT: Advances in cancer treatment have allowed young patients to enjoy longer survival. Consequently, new techniques to preserve the ovaries have been studied for the improvement of the success of reproduction.
OBJECTIVE: To evaluate the effects of melatonin added to the cryopreservation medium.
METHODS: The animals were distributed into two study groups (n=10 in each): 1) Control (CT); 2) Melatonin (MT).
PARTICIPANTS: Twenty adult females Wistar rats.
INTERVENTIONS: Rats were submitted to intact whole ovary freezing for 24h, using melatonin diluted to the medium, 10-7M in 15?l of solution (MT) or not (CT). After thawing, grafts were implanted in the retroperitoneum, without vascular anastomosis, each on one side of the psoas muscle. The grafts were recovered between the 30th and 35th post-operative (PO) day.
MAIN OUTCOME MEASURES: Daily vaginal smears were collected after the 15th PO day; grafts were assessed for histology (follicle F and corpora lutea CL density), fibrosis analysis (collagen types I and III) and immunohistochemical staining for endothelial cells (von Willebrand factor - vWF), apoptosis (TUNEL, caspase), estrogen and progesterone receptor, and cellular proliferation (Ki67).
RESULTS: In all animals, there were characterization of estrous phase of estrous cycle, viable ovarian follicles in several stages of development and intact, and functioning corpora lutea. The use of melatonin promoted an increase in: mature follicles, collagen type I, endothelial cells (vWF) on F, cellular proliferation (Ki67) and estrogen receptors both on F and CL, apoptosis on F (caspase and TUNEL) and CL (TUNEL) ($p<0.05$). Collagen type III was reduced in MT ($p<0.05$). There were no difference on number of immature follicles, corpora lutea and apoptosis by caspase on F and progesterone receptor on F or CL.
CONCLUSIONS: Melatonin application to the cryopreservation medium may enhance structural and functional preservation of ovary graft. Future studies in humans shall confirm those findings and possibly indicate clinical application.

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