

ULTRASTRUCTURE OF OVARIAN SURFACE EPITHELIUM CELLS AFTER STIMULATED OVULATION ON ANIMAL MODEL

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Ovarian surface epithelium (OSE) performs a protective function of the female gonad. The cells constructing the epithelium are physiologically adjusted to lose integrity as a result of repeated ovulation [1]. OSE cells are also the source of the majority of ovarian neoplasms [2, 3].

The aim of the study was to evaluate the ultrastructure of OSE cells from female rats of Wistar strain exposed to the effect of human chorionic gonadotropin (hCG). There were created three experimental groups of animals which received hCG in a single intramuscular injection (3 day estrus) in three increasing doses. The initial hCG dose was the maximum human therapeutic dose, i.e. – 7,5 m.u., and the following doses were – 15 m.u. and 22,5 m.u. The control group was constituted by female rats which received physiological saline. In order to conduct the experiment a permit was obtained from the Ethics Committee of Medical University in Lublin. Pairs of ovaries were collected from all the animals to be examined in an electron microscope.

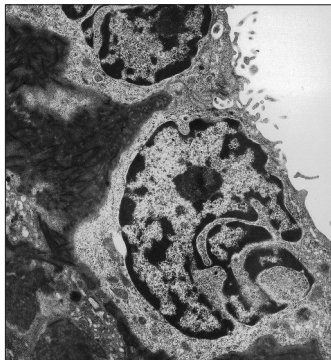


Figure 1: Experimental group (hCG – 22,5 m.u.). OSE cells. Mag. 12000x

The ultrastructural image of OSE cells of experimental animals (Fig. 1) revealed changes in comparison to analogous cells of female rats from the control group.

OSE cells of animals from the experimental groups were very irregular in shape, they resembled “blebs” effect. On the surfaces of cells directed towards the peritoneal cavity there were observed abundant thin cytoplasmic processes. The contours of cell nuclei were irregular. In the cytoplasm there were vacuoles containing material of different electron density, dilated SER cisterns and numerous ribosomes. Those changes intensified with an increase in hCG dose.

The ultrastructural analysis of OSE cells suggests that high doses of hCG may cause „blebs” effect, i.e. lead to changes in cells cytoskeleton or stimulate the process of apoptosis.

References

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