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BOOK OF ABSTRACTS



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OVARIAN SURFACE EPITHELIUM IN NEWBORN RATS: GERM CELLS WAREHOUSE

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The ovarian surface epithelium (OSE) is a very dynamic part of the ovary, with an important role in ovulation during the reproductive period. It represents a source of germ cells in the fetal period but data regarding the role of the OSE in the postnatal period are contradictory. Although the OSE has been the subject of research in the past few years, its ultrastructure in newborn rats has not yet been studied. The aim of this study was to examine rat OSE ultrastructure features in the first 24h hours after birth.

Six newborn rats were euthanized at 12h±2 hours after birth. Their ovaries were fixed in 4% glutaraldehyde, post-fixed in 1% osmium tetroxide, routinely dehydrated and embedded in araldite. Semi-thin sections were stained with toluidine blue, and used to select areas of interest. Ultra-thin sections of selected areas were mounted on copper grids and examined under a Philips CM12 transmission electron microscope. Ultrastructural analysis revealed the presence of a typically single-layered OSE with sporadic pseudostratified appearance, both consisting of cuboidal and/or columnar cells. The OSE cells' nuclei had irregularly dispersed chromatin, and a central or apical location. From the surface of the OSE cells numerous microvilli and cytoplasmic projections extended towards the peritoneal cavity. Continuous *tunica albuginea* was not found, but occasionally groups of fibroblast-like cells were present, indicating the onset of its formation. Numerous oogonia and oocytes were identified between OSE cells or up to their basal part, suggesting that extrusion (the release of germ cells into the peritoneal cavity) may be an important mode of germ cell elimination.

In the early postnatal period in rat ovaries massive death takes place of oogonia and oocytes, mostly via apoptosis and autophagy. Further investigation might reveal the contribution of extrusion as another form of germ cell elimination for both, maintaining and balancing their number in the ovary, which is necessary for proper reproductive function.