

The structural differences of ewes oviductal ampulla secretory cells during follicular and luteal phases - a scanning and transmission electron microscopical investigation

ABSTRACT

The aim of the present study was to differentiate the ultrastructure as features of secretory cells within the ampulla region of the sheep oviduct during follicular and luteal phases of estrous cycle. Fourteen ewes were slaughtered either at the peak of follicular or luteal phase for sample collection. Ampulla were taken and processed accordingly for scanning and transmission electron microscopy. Blood samples were taken every alternate day for hormonal profiles analysis using RIA. During follicular phase, the population of the secretory cells was lower as compared to the luteal phase, while the number of ciliated cells was higher. The secretory cells were rounded, turgid with intact microvilli but during luteal phase the surfaces were broken and some secretions were oozing out. From TEM, at follicular phase, the secretory cells have blunt processes at the apex with intact microvilli, but during luteal phase, the cytoplasmic protrusion increased in volume. Numerous secretory granules were identified and observed in both phases but they were of different sizes and electron density. In conclusion, the present observations revealed marked cyclic changes and differences of the secretory cells during these two phases of estrous cycle. During follicular phase, the secretory cells were at the preparatory stage while they were actively secreting during luteal phase.

Keyword: Ewe; Follicular; Luteal; SEM; TEM