HISTOLOGICAL, HISTOCHEMICAL AND SCANNING ELECTRON MICROSCOPIC STUDIES ON THE OVIDUCT AND UTERUS OF JAFFARABADI BUFFALO (Bubalus bubalis) DURING FOLLICULAR AND LUTEAL PHASES

ABSTRACT

Key words: Histochemical, Histological, Jaffarabadi buffalo, Oviduct, Uterus

The present study was conducted to characterize histomorphological, histochemical and scanning electron microscopic changes during follicular and luteal phases in oviduct and uterus of twenty adult Jaffarabadi buffaloes. Oviductal mucosa showed extensive anastomosing folds. The folds increased in number and height during follicular phase and decreased from infundibulum towards isthmus. Epithelium was pseudostratified columnar having ciliated and secretory cells. Height of epithelium was more in follicular phase. The thickness of tunica muscularis in isthmus increased significantly which has important role in sperm transportation. Endometrial epithelium was of pseudostratified columnar and glands were of simple coiled, branched tubular type. The height of lining and glandular epithelium were more in follicular phase. Glands were more coiled and branched during luteal phase. Cervical mucosa was thrown into longitudinal folds. Uterine glands were absent in cervical region. Surface epithelium was simple columnar type including goblet cells, and few ciliated cells.

In follicular phase, oviductal epithelium showed strong reaction for neutral mucopolysaccharides whereas, stroma of the mucosal folds and tunica muscularis showed moderate reaction while tunica serosa showed weak to moderate reactions. Weak to moderate lipid reaction was observed in the apical part of oviductal epithelium. Uterine epithelium showed moderate reaction for neutral whereas, weak for acid mucopolysaccharides. Tunica muscularis was moderately positive for neutral and acidic mucopolysaccharides. In follicular phase, cervical epithelium showed intense AB-PAS reaction while moderate reaction observed during luteal phase. Cervical glands showed intense positive reaction for acid mucopolysaccharide.

Scanning electron microscopic observations, revealed large number of longitudinal folds in oviductal mucosa lined by ciliated and nonciliated cells. In follicular phase, epithelium was densely ciliated with few non ciliated cells. In luteal phase, epithelial lining of infundibulum and ampulla had more number of secretory cells as compared to follicular phase. Isthmus showed lesser differentiation in ciliation between oestrous phases. Uterine
epithelium consisted of ciliated and nonciliated cells. Ciliated cells were more in follicular phase whereas, secretory cell were more during luteal phase. Narrow cervical folds were separated by small crypts, lined by ciliated and nonciliated epithelial cells. In this study histomorphological, histochemical and scanning electron microscopic changes during follicular and luteal phases in oviduct and uterus of Jaffarabadi buffaloes were established.