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Revised

Influence of cycle stage, age and endometrial biopsy score on oxytocin receptor distribution and gene expression in the cervix and uterus of non-pregnant mares

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Abstract

Persistent breeding-induced endometritis (PBIE) or delayed uterine clearance (DUC) are major causes of mare subfertility. Oxytocin and its receptor are thought to play significant roles in the pathogenesis of DUC but the specific roles of oxytocin receptor (OR) distribution and gene expression remain undefined.

In this study both OR distribution and gene expression in the endometrium, myometrium and cervix during both luteal and non-luteal phases in non-pregnant mares (n=27) of differing age (young: 2 – 9 years, n=17; old: \geq 10 years, n=10) and endometrial biopsy score were described using immunohistochemistry (IHC) and quantitative reverse-transcription polymerase chain reaction (RT-qPCR), respectively.

Immunohistochemistry showed a similar pattern of OR distribution in uterus and cervix, with the exception of the glandular epithelium, absent in the cervix. Uterine ORs were localized in endometrial luminal and glandular epithelia, transmural vascular endothelium, sub-epithelial and peri-glandular stromal cells and myometrial

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