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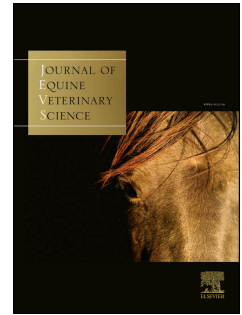
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Comparison of clinical signs, endometrial culture, endometrial cytology, uterine low volume lavage, and uterine biopsy, and combinations in the diagnosis of Equine Endometritis

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Abstract

1 Endometritis is the most common cause of infertility in mares, however many mares fail to be
2 diagnosed despite availability of many diagnostic tests. Our objective was to compare
3 different diagnostic methods, and establish a cut off value for the number of
4 polymorphonuclear cells (PMNs) in cytology samples. Fifty-four mares were classified
5 positive for endometritis based on endometrial biopsy ('Gold Standard') and in a later
6 analysis, the mare was reclassified as positive for endometritis if two or more of the following
7 5 criteria on a checklist were present ('New Gold Standard'; NGS): (1) abnormal clinical
8 findings; (2) abnormal gross character of low volume lavage (LVL) fluid; (3) positive
9 endometrial cytology; (4) bacterial growth on culture of the LVL pellet; and (5) histological
10 evidence of inflammation on endometrial biopsy. Kappa coefficient (k) and percentages were
11 calculated for sensitivity and positive predictive value (PPV) using SAS® 9.3 software.
12 Endometritis was diagnosed in 35/44 (79.5%) mares by biopsy. Based on the endometritis
13 checklist, 33/51 (64.7%) mares were positive for endometritis. The character of LVL was
14 45% sensitive, while culture was 22% sensitive, when compared to endometrial biopsy. 1%
15 neutrophil to epithelial cell ratio was the most sensitive cut off value (93.3%) when using a
16 guarded swab (k=0.64). Endometrial biopsy was the most sensitive diagnostic method when
17 compared against the NGS (sensitivity=86%). Abnormal clinical findings and positive
18 cytology showed moderate agreement with the NGS (k=0.41 and k=0.38, respectively). These
19 studies demonstrate the importance of combining clinical findings and laboratory data when
20 evaluating mares for endometritis.

Highlights

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