

# The value of cytology in the diagnosis of endometritis in the mare - correlation with microbial culture

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## INTRODUCTION

Endometritis is a common cause of infertility in mares, with strong economic impact, and the presence of uterine inflammation can be determined by cytology or biopsy. Microbiological analyses and testing the sensitivity to antibiotics are important to maximise the therapy efficacy.

Our aim was to examine the relationship between the presence of inflammation and microbial growth, including its association to the presence of Gram-positive / Gram-negative bacteria.



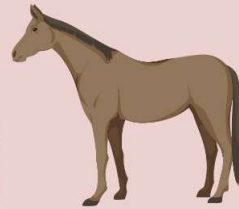
Fig.1 – Lusitano broodmare and foal.



Fig.2 – Broodmare in preparation to sample collection.

## MATERIAL AND METHODS

Sample collection



- 112 Lusitano broodmares
- 4 to 24 years old
- in estrus (n=78) or diestrus (n=34) stage of the cycle

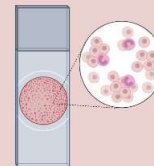


### Uterine samples

collected aseptically by either:

- Lavage (n=65)
- Swab (n=13)
- Biopsy (n=34)

Sample analysis



### Cytology

- Giemsa stain
- Inflammation >5% polymorphonuclear neutrophils



### Microbiology

- Blood and McConkey agar
- Biochemical or molecular identification



### Data analysis

- Endometritis?

## RESULTS

Bacterial growth was found in 64.8% of the samples. Uterine biopsy was the method that detected more intrauterine infections (76.5%), followed by uterine lavage (60.3%). Within samples with positive culture, 63.6% showed no inflammation on cytology, followed by 18.2% presenting moderate inflammation. Absence of inflammation occurs more often with Gram-positive bacteria (66.7%) in comparison to Gram-negative bacteria (25.9%). Severe inflammation occurred more often in association with Gram-negative bacteria (66.7%). From the mares with negative culture, 36% had some degree of inflammation.

## CONCLUSIONS

- ✓ Mares with inflammation but no bacterial growth highlight the high sensibility of cytology in the diagnosis of uterine inflammation.
- ✓ A positive culture without inflammation nor clinical signs should not be considered pathogenic.
- ✓ In the mares under study, the presence of Gram-negative bacteria induced a stronger pro-inflammatory immune response.

Cofinanciado por:

