

BACTERIAL EVALUATION OF CRANIAL VAGINA IN FERTILE AND INFERTILE BITCHES

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INTRODUZIONE

In the literature few data are present about the effect of vaginal bacteria overgrowth on pregnancy rate. Mycoplasma of the reproductive tract are currently considered to be opportunistic, but their possible pathogenic role can be hypothesized. In this cross-sectional study we evaluated the bacterial overgrowth in the cranial vagina in bitches with a history of pregnancy failure (IG-infertile group) or not (FG-fertile group), identifying the most common species of Mycoplasma and Ureaplasma and their antimicrobial susceptibility.

METODI

Ninety-five bitches have been evaluated for ovulation timing before mating/insemination with fresh semen. During the gynaecological examination microbiological samples were collected from the cranial vagina using a sterile uterine culture swab, which was then added in solid amies medium and stored at 4°C for 24-36h. The samples were cultured for Enterobacteriaceae, Pseudomonadaceae, Streptococcus spp, Staphylococcus spp, Enterococcus spp, Ureaplasma spp, Mycoplasma spp and considered positive when Colony-Forming Unit/sample (or Colour-Changing Units for Mollicutes) >102. Bacterial strains were tested for antimicrobial susceptibility and, if positive, bitches were treated with specific antibiotics before or just after mating/insemination. Following pregnancy diagnosis and evaluation of fetal viability, the number of pups delivered for each bitch was registered.

RISULTATI

Twenty-four out of 35 and 39/60 bitches were positive for culture in FG and IG, respectively. The logistic regression model evidenced that, the Odds Ratio of the pregnancy failure, regardless of culture positivity, in IG was 3.1 (95% C.I. 1.05 – 9.20; p<0.05). DNA sequencing identified Mycoplasma spumans and Ureaplasma diversum as the main isolated Mollicutes in cranial vagina. Antimicrobial susceptibility test carried on Mollicutes revealed that the highest sensitivity was to doxycycline and a high numbers of bacterial strains were resistant to macrolides.

CONCLUSIONI

No significant differences between groups in regard with bacterial overgrowth or any specific positivity for bacteria and eventual treatment were found. A moderate tendency that IG being positive for Ureaplasma spp (Odds Ratio 4.0; p=0,10) was observed. Streptococcus spp and Ureaplasma spp are significant risk factor for pregnancy failure in both groups despite treatment. Further evaluations are ongoing to expand the caseload.