Proceedings of the 8th International Symposium on Canine and Feline Reproduction

June 22-25, 2016
Paris, France

In a joint meeting with the XIX EVSSAR Congress

Reprinted in IVIS with the permission of the ISCFR Organizers
Cytology and bacteriology of colostrum and milk of healthy breeding bitches
Ada Rota¹, S. Veggi², P. Pregel¹, A. Starvaggi Cucuzza¹, M. Corrò³
¹Department of Veterinary Science - University of Turin, Italy ²Practitioner ³Istituto Zooprofilattico Sperimentale delle Venezie
ada.rota@unito.it

Studies on milk cytology and bacteriology for the evaluation of mammary gland health are limited in dogs. The objectives of this study were 1) to monitor cytology and culture results in serial samples of colostrum and milk of postpartum bitches in order to evaluate the health status of the mammary glands and 2) to investigate if an association exists between cytology and bacteriology results. Eighteen postpartum bitches of different breeds were included in the study. Some drops of colostrum (day 1) and milk (day 7, 15) were aseptically collected from each inguinal mammary gland and a) directly smeared on a microscopic plate for May-Grunwald Giemsa staining b) collected on a bacteriological swab for microbiologic exams. In each slide, the percentage of leukocyte subpopulations was determined by distinguishing cell types in 10 randomly selected fields; samples were then categorized according to neutrophils (NG) number in three classes (≤ 10 NG; 11 < NG ≤ 50; NG > 51). Culture results were categorized as potentially indicative of mastitis when bacteria were isolated in high number or a bacterium was isolated in pure culture. Fisher’s exact test was used to test the association between cytological and bacteriological classes (GraphPad Prism 4.00, California, USA). Cell counts almost always resulted in low numbers: in 83% of smears (N=100) less than 5 leukocytes were counted and in 3% less than 30 ones. Twelve samples of three bitches showed 60-200 leukocytes and macrophages represented the predominant cell population (>90%). Only two samples were classified in the highest cytological class; bacteria within NG were never observed. Cultures yielded only three negative samples; staphylococci were the more represented bacteria and Staphylococcus pseudintermedius the most represented species. Cytological and bacteriological classes did not result significantly associated, meaning that a bacteriological condition suggestive of mastitis was not significantly associated with large number of neutrophils. No puppy showed any disease or died in the litters of the bitches with high cells number. Both colostrum and milk generally contain very low numbers of leukocytes; macrophages can represent a sign of galactostasis and milk resorption towards the end of lactation or when few puppies are suckling. Isolation of bacteria from colostrum or milk is very common and is not indicative of mammary gland infection; cytology appears to be necessary to correctly interpret bacteriological findings. In case of high NG number, in the absence of clinical signs but with a positive culture, the doubt of subclinical mastitis exists.