ABSTRACTS

ISCFR 2012

July 26-29, Whistler, Canada

7th International Symposium on Canine and Feline Reproduction

In a joint meeting with

EVSSAR 2012

15th Congress of the European Veterinary Society for Small Animal Reproduction

Editors: Gary England, Michelle Kutzler, Pierre Comizzoli, Wojciech Nizanski, Tom Rijsselaere and Patrick Concannon

Reprinted in IVIS with the permission of the ISCFR Organizers
Can continuous vaginal temperature measurement predict parturition in bitches?

Maeder, B; Arlt, S; Burfeind, O and Heuwieser, W

Clinic for Animal Reproduction, Faculty of Veterinary Medicine, Freie Universität Berlin, Berlin, Germany
brittama@campus.fu-berlin.de

OBJECTIVE: A decrease in body temperature associated with parturition has been reported for many species (1-3). The predictive value of the temperature drop in bitches, however, still remains controversially discussed (4, 3, 5). In fact, some bitches seem not to show a temperature drop (6, 7). The objective of this study was to determine sensitivity and specificity of a temperature decline measured continuously by a logger placed in the vaginal cavity to predict parturition in bitches. This method of temperature measurement in bitches was validated previously in another clinical trial.

MATERIAL AND METHODS: In this study 16 bitches of different breeds were enrolled with informed consent of the owner. Pregnancy of the bitches was confirmed by ultrasonography between days 20 and 28 after ovulation. A temperature logger (DST micro-T, Star Oddi) was applied into the vagina of the bitches on day 57 after ovulation or after mating. The temperature logger was attached to a progesterone free modified Controlled Internal Drug Release device (CIDR-blank) and inserted into the vagina through a sterile round speculum (Karl Storz, Germany) placing it approximately 18 cm deep into the vaginal cavity. A transponder (Back Home Transponder, Virbac) was placed under the silicon lining of the CIDR-blank. Utilizing an identification microchip scanner the transponder could be identified from the outside ensuring the presence and position of the temperature logger in the vagina. The logger was programmed to measure temperature in 10 min intervals. It was expelled spontaneously from the vagina before delivery of the first puppy.

RESULTS: In the last 24 hours before parturition mean temperature was lower (37.3 ± 0.3 °C) than 24 to 48 hours (37.6 ± 0.2 °C), 49 to 72 hours (37.7 ± 0.1 °C), 73 to 96 hours (37.7 ± 0.1 °C) and 97 to 120 hours (37.7 ± 0.1 °C, p < 0.05) earlier. When vaginal temperature decreased by ≥ 0.3 °C within 24 and 36 hours it predicted the onset of parturition within a period of 24 hours with a sensitivity (Sen) of 58% and 69% and a specificity (Spe) of 84% and 77%, respectively. A temperature drop of ≥ 0.4 °C within 24 hours predicted parturition within 48 hours with a Sen of 69% and a Spe of 88%. The onset of parturition within 48 hours after a temperature decrease of ≥ 0.3 °C within 36 hours was predicted with a Sen of 66% and Spec of 87%.

CONCLUSION: To our knowledge, this is the first report of continuous temperature measurement in the prepartum period of the bitch. Furthermore, this method was characterized by calculation of Sen and Spe for prediction of parturition. The computed values for Spe were higher thus, indicating a more precise prognosis of no impending parturition. In conclusion, our findings may assist to predict parturition in bitches. Monitoring the body temperature drop as an indicator for imminent parturition is often recommended by veterinarians to owners. It may be a useful and applicable method in the course of preparation of birth process and provides important information in case of dystocia. Nevertheless, owners and veterinarians must be aware that the temperature drop may be only 0.3 °C or may not be existent.