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

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
Clinical use of melatonin implants to control reproduction in breeding queens
Nequinio, M1; Romagnoli, S1; Beccaglia, M2; Trovò, C2; Banzato, T1; Mollo, A1; Milani, C1;
1Department of Animal Medicine, Production and Health, University of Padova, Italy.
2Ambulatorio Veterinario Beccaglia, Lissone (MB), Italy

High levels of melatonin are observed during interestrus and anestrus in breeding queens. The use of a long-term release formulation of melatonin in biodegradable subcutaneous implant developed for the management of estrus in sheep has been reported to inhibit reproductive cyclicity for 2 to 4 months in laboratory queens (1-3). The objective of this research was to evaluate the duration of melatonin implants in breeding queens in the clinical field. Thirty-one adult breeding queens from commercial cateries or pet queens of different breeds, age and weight were used. Each queen was cycling regularly at the onset of the study (owners had to fill out a behavioral questionnaire documenting past reproductive performance), and normality of health conditions as confirmed by a clinical and reproductive exam (including vaginal cytology), blood sampling for haematology, biochemistry and serum progesterone (P4) assay, as well as uterine ultrasound using a Zonare ultrasound unit (Zonare Medical Systems Inc, Mountain View, California, USA). A melatonin implant (Melovine® CEVA Sante Animale) was inserted in the peri-umbilical area following hair clipping and the administration of 0.3-0.4 ml of 2% lidocaine injected SC close to the umbilical scar. Vaginal smears and owners questionnaires were obtained every two weeks and blood sampling for serum P4 assay was done once every six weeks until return to heat. Blood samples for serum P4 were obtained only from 10 queens. At the time of treatment serum P4 was > 1 ng/ml (range 1.0-19.2 ng/ml) in 4 queens, and < 1 ng/ml (range 0.2-0.82 ng/ml) in 6 queens. For the entire duration of the implant, vaginal smears indicated interestrus. Twelve/31 queens (45%) were in heat during the first week following implantation. The duration of melatonin implant was on average 80 ± 24.7 days (range 26-122). An increase in body weight was noted in most implanted queens with an average difference of 450 ± 17 grams (range 200-500g). Queens’ behavior during treatment was almost unchanged, some queens were quieter and less interested in the surrounding environment than before. Depending on owner’s request, at the end of the treatment 4/31 queens were re-implanted, 1/31 was sterilized and 12/31 were mated with 8/12 becoming pregnant and producing normal litters. The shorter duration of the melatonin implant in our study compared to the literature (1-3) might be due to the fact that previous studies were done on queens kept in a rigidly controlled environment with artificial light (1), whereas in our study queens were exposed to different environmental conditions with extended artificial photoperiod, exposure to other cats etc. Melatonin implants may have important clinical applications in feline breeding establishments. The role of breed and/or season should be further investigated.