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## Introduction

- In cats, melatonin regulates ovarian activity reaching peak values in the anestrus and interestrus periods (2, 3). Although exogenous melatonin has shown to suppress feline estrous cycle (1, 4), results concerning its efficiency and safety are not uniform among studies. Furthermore, the effect of melatonin on puberty has never been assessed in this species. The aim of this study was to test the efficacy and safety of a commercial long term release melatonin formulation on feline estrous cycle and puberty postponing.

## Materials and methods

- Two experiments were conducted in domestic cats housed in an indoor cattery and exposed to an artificial photoperiod of 14L:10D. In the first study, postpubertal early interestrus ( $\leq 2$  days) females were randomly implanted melatonin (18 mg/cat sc; Melovine®, CEVA, France; ME, n = 16 or a sc placebo (PL, n = 16). The onset of the first estrous cycle (diagnosed by vaginal cytology and behavior) after implantation was recorded. Ovulatory ( $P_4 > 2\text{ng/ml}$ ) interestrus were excluded from the analysis.
- In the second study, eighteen,  $120 \pm 20$  days old,  $1.5 \pm 0.2$  kg, prepubertal queens were randomly assigned to the same ME (n=10) and PL (n=8) treatments. Age and weight at puberty (by vaginal cytology and behavior) were also recorded.
- In both experiments efficacy and safety were compared between groups by the Student's t test and Chi<sub>2</sub> test, respectively.

## Results

- In the first study, interestrus intervals in ME and PL groups were  $64.69 \pm 22.44$  vs.  $16.88 \pm 2.8$  days ( $p < 0.0001$ ) respectively. Interestrus – first estrous cycle interval in the same groups were  $51.69 \pm 19.94$  vs.  $11.5 \pm 4.1$  days ( $p < 0.0001$ ).
- In the prepubertal experiment, neither age ( $213.7 \pm 50.66$  vs.  $184.25 \pm 74.08$  days; ( $p=0.3316$ ) nor body weight ( $2.34 \pm 0.55$  vs.  $2.5 \pm 0.64$  ( $p > 0.5746$ )) differ between ME and PL groups, respectively. None of the cats of both trials presented local or systemic clinical side effects related to the treatments.
- Additionally, 6 animals that were mated, after the studies had finished, became pregnant.

## Conclusion

- It is concluded that, in these trials, this melatonin formulation safely caused short term prolongation of the interestrus intervals but did not postpone puberty in domestic cats.

## Acknowledgements

The authors thank to CEVA (France), the Catholic University of Córdoba and Royal Canin (Argentina).

## References

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