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
Post natal progestagen administration does not supress endometrial glands development in the bitch

Teixeira, NS1; Martins, BB1; Volpato, R2; Freitas, PMC3; Lopes, MD2; Lauffer-Amorim, R2 and Luz, MR1,3**

1Department of Veterinary Medicine, Federal University of Espirito Santo – UFES, Alto Universitário, Alegre ES, Brazil, 29500-000; 2School of Veterinary Medicine and Animal Science – FMVZ, São Paulo State University - UNESP, Rubião Jr., Botucatu SP, Brazil, 18618-970; 3College of Veterinary Medicine, Department of Veterinary Clinics and Surgery, Federal University of Minas Gerais – UFMG, Av Antonio Carlos, 6627 – Belo Horizonte MG, Brazil, 30123-970.

*tatyteixeira85@hotmail.com; **luzmr@uol.com.br

OBJECTIVES AND METHODS: The disruption of endometrial glands development would alter the functional capacity and embryotrophic potential of the adult uterus. Exposure of neonatal ewes to a progestin ablated endometrial gland differentiation and produced infertile females (1). Thus, adult bitches with total absence of endometrial glands (uterine gland knockout; UGKO) would be permanently infertile and allow reproductive control of the species. It was evaluated the effect of treatment with medroxyprogesterone acetate (MPA) on the development of endometrial glands in puppies. All procedures were performed following the Brazilian College of Animal Experimentation (COBEA) principles. Sixteen cross-bred puppies from different litters, at Day 1 after birth were assigned randomly to 2 groups: GMPA (n=8) puppies received subcutaneous treatments of MPA (10 mg/kg body weight) at intervals of 3 weeks (2), from Day 1 after birth to age 6 months, and GC (n=8) served as untreated animals. At age 6 months, ovariohysterectomy was performed on all dogs and samples from both uterine horns were taken and fixed for histological examination (H&E) and immunohistochemistry. We evaluated the presence and number of endometrial glands, and the ER and PR stainings [ER-α clone 1D5 (Dako – CA, USA); monoclonal antibody, mouse anti-human estrogen receptor α clone PPG5/10 (Dako – CA, USA); monoclonal antibody, mouse anti-human estrogen receptor β clone PG5/15 (Dako – CA, USA); monoclonal antibody, Immunotech – France] in the surface epithelium and on endometrial stroma (in each slide 200 cells were counted for positively stained nuclei). The statistic significance was assessed by Student’s t-test. A p-value of ≤ 0.05 was considered statistically significant.

RESULTS: In both GMPA and GC animals there was a good degree of endometrial glands development at age 6 months. There was no significant difference on ER-α expression (134.00 ± 31.30 and 145.50 ± 45.14), ER-β expression (82.87 ± 72.31 and 66.75 ± 46.35) (P ≥ 0.05) on epithelium, between GMPA and GC, respectively. There was also no significant difference on PR expression (169.87 ± 20.07 and 170.00 ± 19.32) and ER-β expression (87.12 ± 47.98 and 49.12 ± 26.93) (P ≥ 0.05) on endometrial stroma, between GMPA and GC, respectively. The animals from GMPA presented clitoris hypertrophy since age of 4 months, with total regression at age of 19 months. All the bitches were followed-up for one year after the end of MPA treatment, and during this period none of them showed signs of estrus. No side effects were observed on animals from control group. In the present study, the use of MPA, from Day 1 after birth to age 6 months, was not able to cause ablation of endometrial glands in bitches. Differently, in sheep, the post natal administration of norgestomet, a synthetic progestagen known to be strongly progestagenic in ruminants, supressed endometrial gland development (1,3), leading to infertility in treated ewes. Conversely, fillies submitted to norgestomet (a weak progestagen in the species) plus estradiol valerate or altrenogest (a strong progestagen) plus estradiol valerate, from Day 1 after birth to age 6 months, showed full normal endometrial gland morphogenesis, development and function at age 2 years (4).

CONCLUSION: The treatment of puppies with MPA, from Day 1 after birth to age 6 months, in the dosis and frequency used, does not supress endometrial glands development.

ACKNOWLEDGEMENTS: The authors thank CAPES-REUNI (Brazilian Government) for the students’ financial support and DuMilho Rações (Bomguy3) for the animal food supply.