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

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Doppler ultrasonographic assessment of uterine arteries during normal canine puerperium

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OBJECTIVES AND METHODS: The aim of this study was to describe Doppler ultrasonographic changes of uterine arteries during normal canine puerperium. Ten healthy, pure-bred bitches, 1-5 years of age, weighing 2.8-4.5 kg were ultrasonographically assessed during 4 weeks on days -7, 7, 14, 21 and 28 (day 0 defined as the day of parturition). Uterine body was recognized with two-dimensional ultrasound in a transversal axis. Total horns diameters (TD) were measured immediately before the uterine bifurcation and both horns were averaged. Color Doppler was used to localize uterine arteries at both sides of the body and pulsed-wave Doppler was performed to obtain the waveforms. Peak systolic velocity (PSV) and end diastolic velocity (EDV) were measured. Resistance index [(PSV−EDV)/PSV] was automatically calculated.

Values of TD and RI were analyzed by repeated measures ANOVA followed by Tukey comparison test (SPSS 18.0; SPSS, Chicago, IL, USA). A correlation analysis was also carried out between RI and TD. P<0.05 was considered significant.

RESULTS: All the animals had a normal parturition and puerperium. As expected a progressive decrease of TD was found (P<0.01) in the course of the study (Figure 1). Conversely, RI increased throughout puerperium (P<0.01). Correlation between both parameters was r = -0.657 (P< 0.01).

CONCLUSION: The increase of RI of uterine arteries during physiological puerperium was previously reported in women (1) and cows (2), although this is the first report in dogs. The ultrasonographic and vascular changes in this period are concomitant with regenerative changes in the glandular and epithelial structures of the uterus (3). It is concluded that normal canine puerperium is characterized by an increase of RI of uterine arteries.