

# **ABSTRACTS**

**ISCFR 2012**

July 26-29, Whistler, Canada



**7<sup>th</sup> International Symposium  
on  
Canine and Feline Reproduction**

In a joint meeting with

**EVSSAR 2012**

15<sup>th</sup> Congress of the

**European Veterinary Society for Small Animal Reproduction**

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

**Magnetotherapy: A non-invasive treatment for benign prostatic hyperplasia in the dog****Leoci, R;** Aiudi, G; Silvestre F and Lacalandra GM

Department of Animal Production, Faculty of Veterinary Medicine, University of Bari. Valenzano (Ba), Italy 70010

leocivet@yahoo.it

Benign Prostatic Hyperplasia (BPH) is a primarily non-inflammatory enlargement of the prostate resulting from a normal aging process. BPH can be found in more than 95 % of aged intact male dogs, but common clinical symptoms are only present in a few of them. However, as the condition continues with age, BPH will be a source of constant discomfort. Although there is evidence that androgens and oestrogens are involved in the growth of stromal and epithelial cells, and the induction of fibromuscular overgrowth in the prostate, the cause of BPH remains unclear, but seems to be multifactorial. It was postulated that hyperplasia in the stromal and glandular compartments might be induced by stromal growth secondary to hypoxia, which in turn results from abnormal blood flow patterns.<sup>1</sup> Castration is the most common therapy, but BPH can also be treated pharmacologically in valuable dogs.<sup>2</sup> Magnetotherapy is a physical therapy consisting of the artificial magnetic field's activity influencing living organism. The mechanism of action is not quite clear so far, clinical investigations revealed, however, a favorable anti-inflammatory, angioedematous and analgesic therapeutic effect.<sup>3</sup>

**OBJECTIVES AND METHODS:** The aim of this work was to evaluate the efficacy of pulsed electromagnetic energy as a non-invasive modality for treating canine BHP, by measuring its influence on prostate volume. Twenty-one aged ( $9.6 \pm 2.7$  years) intact male dogs weighting from 5 to 42 kg, affected by asymptomatic BHP, were studied. Diagnosis of BHP was made by cytology evaluation, semen analysis, ultrasonography. Dogs were divided in three equal groups (n=7) according to breed size (S, M, L). Prostate glands were scanned by transabdominal ultrasonography and diameters were recorded in order to calculate the prostate volume.<sup>4</sup> Subjects were treated three times a day (every 6-8 hours) with magnetotherapy for 5 minutes (Magcell® Vetri, Physiomed Elektromedizin AG, Germany) for three weeks. Measurements were taken before the application (T0), and three weeks later (T1). Data were statistically analyzed using ANOVA test ( $p < 0.05$ ).

**RESULTS:** No local or systemic adverse effects were seen. Prostatic volume (mm<sup>3</sup>) reduction in groups S-M-L was respectively of 61%, 48%, 36% (T0 versus T1;  $p < 0.05$ ). The average prostatic volume reduction was 48,3%.

**CONCLUSION:** The results of this study demonstrate the safety and efficacy of magnetotherapy in reduction of BHP in dogs and suggest its use as conservative therapy. However, further investigations are needed to explore the influence on the glandular blood flow, seminal plasma and testosterone levels.

- (1) Ghafar MA, Puchner PJ, Anastasiadis AG, Cabelin MA, Buttyan R. Does the prostatic vascular system contribute to the development of benign prostatic hyperplasia? *Curr Urol Rep* 2002; 3: 292-6.
- (2) Renggli M, Padrutt I, Michel E, Reichler I. Benign prostatic hyperplasia: treatment options in the dog. *Schweiz Arch Tierheilkd* 2010; 152 (6): 279-84.
- (3) Navratil L, Hlavaty V, Landsingerova E. Possible therapeutic applications of pulsed magnetic fields. *Cas Lek Cesk* 1993; 132 (19): 590-4.
- (4) Kamolpatana K, Johnston GR, Johnston SD. Determination of canine prostatic volume using transabdominal ultrasonography. *Vet Radiol Ultrasound* 2000; 41 (1): 73-7.