ABSTRACTS

6th International Symposium on Canine and Feline Reproduction

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6th Biennial EVSSAR Congress

European Veterinary Society for Small Animal Reproduction

"Reproductive biology and medicine of domestic and exotic carnivores"

University of Veterinary Sciences
9th – 11th July 2008
Vienna, Austria

Editors: G. England, P. Concannon, S. Schäfer-Somi

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THYROID FUNCTION AND INFERTILITY IN THE DOG: A RETROSPECTIVE SURVEY IN FIVE BREEDS

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Introduction - Hypothyroidism has been considered for many years as a potential cause of hypofertility or infertility in males and females dogs, especially in large breeds [1]. However, it remains highly controversial. The purpose of our retrospective study was to determine the incidence of hypothyroidism among male and female infertile dogs in potentially predisposed breeds towards this disease.

Materials and methods - 204 dogs from five different large sized breeds were included: 43 Great Danes (9 males, 34 females), 44 Dogue de Bordeaux (10 males, 34 females), 42 Leonbergers (13 males, 29 females), 46 Golden Retrievers (9 males, 37 females), and 29 English Mastiffs (9 males, 20 females). They were all breeding adult animals living in breeding kennels. Males and females were classified into three categories according to the parameters of reproduction: dogs with a normal fertility (no disruption of fertility), dogs with a “low fertility” (females who have not been pregnant at least twice in a row, or males not having given offspring at least twice in a row), and intermediate dogs (not falling within any of two groups). Baseline serum concentration of total thyroxine (T4) and thyroid stimulating hormone (TSH) were used for the diagnosis of hypothyroidism. Animals are classified into three categories: “euthyroid dogs” (dogs with normal T4 and TSH), “hypothyroxinemic dogs” (dogs with a low T4 and a normal TSH), and “hypothyroid dogs” (dogs with a low T4 and a high TSH).

Results

Fertility:
In 3/5 breeds studied, less than half of the animals showed a normal fertility: 48.8% for Leonbergers, 27.6% for English Mastiffs, and 25% for Dogue de Bordeaux. 31/204 dogs only suffered from “low fertility” as defined above.

Thyroid function analysis:
Among all dogs, we found 9.8% (20/204) dogs presenting a low T4 plasma level and a normal TSH plasma level: 2.3% (1/43) in Great Danes, 31.8% (14/44) in Dogue de Bordeaux, 4.8% (2/42) in Leonbergers, 6.5% (3/46) in Golden Retrievers, and 0% in English Mastiffs. We found only 1.5% (3/204) dogs having a low T4 plasma level and a high TSH plasma level: 4.5% (2/44) in Dogue de Bordeaux and 2.4% (1/42) in Leonbergers, and none in the three others breeds.

Compared analysis of fertility and thyroid function:
83.9% (26/31) of dogs with a low fertility, males and females, had normal T4 and TSH plasma values. The three animals with a low T4 and a high TSH did not show any fertility problem. There was no statistical difference on thyroid function between fertile and infertile dogs and bitches.

Conclusion - From our results, hypothyroidism does not appear as a substantial cause of infertility in the bitch and the dog.

Reference