Oral presentations

Incidence of microcytosis in hyperthyroid cats referred for radioiodine treatment

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OBJECTIVES

To document the incidence of erythrocyte microcytosis in a population of hyperthyroid cats referred for radioiodine (RAI) treatment. Microcytosis has been observed but not described in feline hyperthyroid patients; in humans it is associated with hyperthyroidism.

METHODS

Retrospective clinicopathological data were collected for cats undergoing RAI between January and December 2017. Microcytosis was defined as mean corpuscular volume (MCV).

RESULTS

There were 41 female and 37 male cats; age range 7.2–20.8 years. Most were non-pedigree (98.7%). Microcytosis (median MCV 39.3 fL, interquartile range 32.3–41.2) was present in 41% (32/78) of the cats; 1/32 pre-RAI, 9/32 post-RAI and 22/32 pre- and post-RAI. Of the 54 microcytic samples, 85.2% were confirmed as microcytic on smear examination. Of mildly, moderately and severely hyperthyroid cats, 36% (9/25), 37.5% (12/32) and 55% (11/20) were microcytic respectively. Two microcytic cats had low red blood cell counts ($<6 \times 10^{12}/L$). There was no correlation between TT4 and MCV. Microcytosis resolved in 63.6% (7/11) cases with follow-up. Two microcytic cats had comorbidities (portosystemic shunt; triaditis).

STATEMENT (CONCLUSIONS)

Microcytosis was present in a significant proportion of hyperthyroid cats, most without significant comorbidities, and resolved in some following RAI.

Urinary thromboxanes are increased in dogs with IMHA

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OBJECTIVES

Thromboembolic disease is a significant cause of mortality in dogs with immune-mediated haemolytic anaemia (IMHA), but determining which patients are at risk of thrombosis is problematic. A biomarker to predict thrombotic risk would allow individualisation of therapy. Thromboxane- A_2 , produced by both platelets and the vascular endothelium, is a potent platelet activator and may be involved in the pathogenesis of thrombosis in IMHA. Thromboxane- A_2 has a short half-life in plasma, being spontaneously converted to more stable metabolites 11-dehydro-thromboxane B_2 (11-dTXB $_2$) and 2,3-dinor-11-dehydro-TxB $_2$, which are excreted in urine. An 11-dTXB $_2$ ELISA has previously been validated in canine urine. The aim of this study was to compare urinary

11-dTXB $_2$ levels between healthy dogs and dogs with IMHA, with the hypothesis that dogs with IMHA are pro-thrombotic, and will have higher 11-dTXB $_2$ levels.

METHODS

Free-catch urine samples were collected from healthy dogs ($n = 8$), and newly diagnosed IMHA patients ($n = 10$). Samples were frozen at $-80^\circ C$ until batch analysis. Urinary 11-dTXB $_2$ was measured using a commercially available monoclonal ELISA (Cayman Chemicals, Ann Arbor, MI, USA) and expressed relative to urine creatinine (mg). Normality of the data was assessed using a Shapiro-Wilk test and results compared between groups using a T-test.

RESULTS

Dogs with IMHA had significantly higher urinary 11-dTXB $_2$ levels (3.11 ± 1.61 ng/mg creatinine, range 0.97–5.91) than healthy controls (0.68 ± 0.30 ng/mg creatinine, range 0.29–1.32) ($p = 0.01$).

STATEMENT (CONCLUSIONS)

Dogs with IMHA have increased urinary 11-dTXB $_2$ consistent with heightened thromboxane- A_2 production. Further studies correlating 11-dTXB $_2$ levels with clinical outcome measures such as incidence of thrombosis and mortality are warranted.

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