CANINE HYPOTHYROIDISM: A RETROSPECTIVE STUDY

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INTRODUCTION

Hypothyroidism is one of the most common endocrine disorders in dogs, although through the years it has been over diagnosed, as the clinical signs are vague and non-specific, and the diagnostic tests may give false positive results.

OBJECTIVES

1. To determine signalment, clinical presentation, diagnosis and therapy of canine primary hypothyroidism.
2. To describe the frequency of clinical signs and laboratory abnormalities.
3. To establish the median dosage and range of hormone replacement therapy for the initial treatment of hypothyroidism.

MATERIALS AND METHODS

- 21 electronic medical records of hypothyroid dogs from Hospital Clínic Veterinari UAB (2013 - 2022).
- Parameters analyzed: breed, genre, weight, age of diagnosis, previous history, clinical history, systemic symptoms (general, digestive, dermatological, neurological and reproductive), haematology alterations, biochemistry alterations, values of TT4, TSH and fT4 concentrations, and treatment.

RESULTS

About clinical signs:

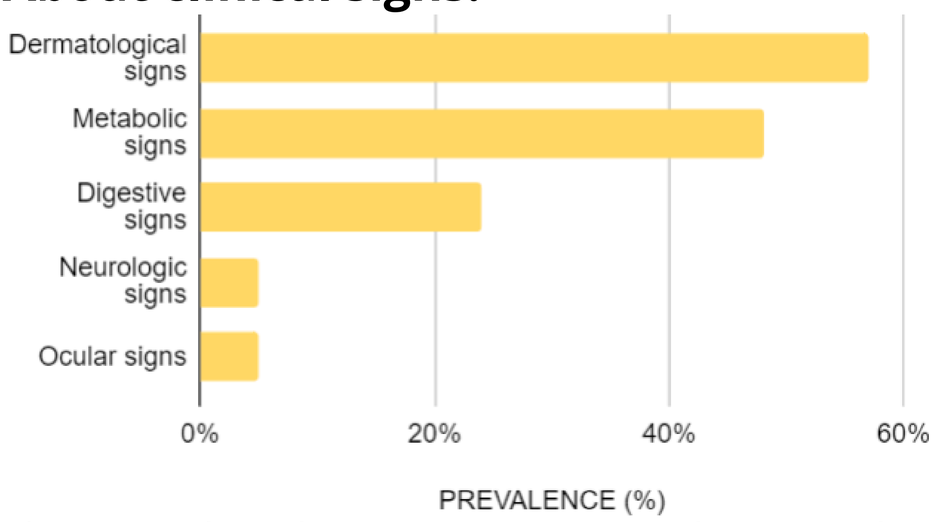

***Figure 1**. Clinical signs more commonly reported in hypothyroid dogs.*

DERMATOLOGICAL SIGNS:
- "Rat tail" 33.3%
- Generalized hypotrichosis 25%
- Bilateral symmetrical alopecia 17%
- Generalized scaling: 17%

METABOLIC SIGNS:
- Weight gain 80%
- Apathy 30%
- Loss of appetite 30%

DIGESTIVE SIGNS:
- Diarrhea 40%

About initial treatment:

- Medium dose of levothyroxine: 26.88 µg/kg every day (range 10.96 – 60.76 µg/kg).
- 23.53% of the dogs SID vs 76.47% BID
- Canitroid®, Leventa®, Eutirox® and Dexnon®

About laboratorial abnormalities:

***Table 1**. Laboratorial abnormalities of hypothyroid dogs.*

LABORATORY ABNORMALITIES		PREVALENCE (%)	MEDIAN VALUE
CBC		13/21 dogs (62%)	
↓ Mean Corpuscular Haemoglobin Concentration (MCHC) (g/dL)		4/13 (30.77%)	31.72 g/dL (32.6 - 39.2)
Non-regenerative normocytic normochromic anaemia	↓ Erythrocyte recount (x10^6/ml)	8/13 (61.54%)	4,35 M/µL (5.5 – 8.5)
	↓ Haemoglobin concentration (g/dL)	6/13 (46.15%)	9.68 g/dL (12-18)
	↓ Haematocrit value (%)	8/13 (61.54%)	29.1% (37-55)
SERUM BIOCHEMISTRY		10/21 dogs (47.62%)	
↑ Cholesterol		8/10 (80%)	627,37 mg/dL (112-326)
↑ FA		2/10 (20%)	408.2 UI/L (20 – 156)

About thyroid hormone tests:

***Table 2**. Thyroid hormone tests carried out, indicating the number of patients in whom it was performed and the median value for each test.*

TEST	SAMPLE (n) (%)	MEDIAN VALUE
TT4	18/21 dogs (85.71%)	0.614 µg/dL (1.3-2.9)
TSH	18/21 dogs (85.71%)	0.91 ng/mL (0-0.5)
fT4	2/21 dogs (9.52%)	0.5 ng/dL (0.6-3)
TgAA	1/21 dogs (4.76%)	35% (<10%: negative; 10-25%: inconclusive; >25%: positive)

CONCLUSIONS

- There is no prevalence of sex nor breed in this study.
- Most of the dogs with hypothyroidism present as main clinical signs alopecia/hypotrichosis, and as main clinical abnormalities, non-regenerative normocytic normochromic anaemia and hypercholesterolemia, as well as a decrease in TT4 and an increase in TSH.
- Although the mean dose of levothyroxine has been 26.88 µg/kg daily, this dose can be overestimated since there has been a case that received an excessive dose at the beginning of the treatment. Most of the dosages were administered every 12 hours.