



A Monthly e Magazine

ISSN:2583-2212

February 2024 Vol.4(2), 611-613

Popular Article

Cracking the Code of Canine Hypothyroidism: A Guide for Pet Owners

Ankit Dahiya¹, Vandana¹, Chand¹

¹PhD scholar, Division of Veterinary Medicine, Indian Veterinary Research Institute, Bareilly-243122

<https://doi.org/10.5281/zenodo.10645048>

Abstract

In the world of canine health, hypothyroidism stands as a common yet often misunderstood endocrine disorder. This article aims to demystify canine hypothyroidism for pet owners, shedding light on its causes, recognizing subtle symptoms, and navigating the path to effective management. We delve into the diverse factors contributing to hypothyroidism in dogs, from genetic predispositions to environmental influences. By highlighting the importance of recognizing early signs such as weight gain, lethargy, and skin issues, pet owners can play a crucial role in prompt diagnosis. The article emphasizes the challenges of identifying hypothyroidism amidst other health issues, urging vigilance in seeking veterinary consultation for accurate assessments. Diagnostic advancements, including thyroid function tests and imaging studies, are explored as tools to uncover hypothyroidism. In terms of management, the article provides insights into the use of synthetic thyroxine supplementation as a cornerstone for treatment. Tailoring treatment plans to individual dogs, regular monitoring, and addressing potential side effects are highlighted as integral components of successful long-term management. This article serves as a comprehensive guide for pet owners, empowering them with knowledge to navigate the complexities of canine hypothyroidism. By unravelling the mysteries surrounding this condition, we aim to contribute to the well-being of our furry companions, ensuring they lead healthy and happy lives.

Introduction

Man's best friend, our beloved canine companions, can face health challenges just like we do. One common yet often misunderstood condition is canine hypothyroidism. Though, it is supposed to be a very common ailment in canines but the prevalence of hypothyroidism in dogs is not exactly known. The availability and reliability of data is complicated by unreliability of the diagnostic methods and the variability of prevalence seen in different breeds (Graham *et al.*, 2007).



In this comprehensive guide, we aim to empower pet owners with the knowledge needed to recognize, understand, and effectively manage hypothyroidism in dogs.

Understanding Canine Hypothyroidism

Hypothyroidism occurs when the thyroid gland fails to produce an adequate number of thyroid hormones. Genetic predispositions, autoimmune thyroiditis, and environmental factors contribute to the development of this condition (Kaplan & Mooney, 2013). Certain breeds, including Golden Retrievers, Doberman Pinschers, and Dachshunds, are particularly prone to hypothyroidism (Scott-Moncrieff *et al.*, 2015). Hypothyroidism can be present at birth (congenital) or it may be acquired during the lifetime of the pet. Acquired form of the disease is most common. Primary hypothyroidism occurs due to decreased synthesis of T₃ and T₄ hormones by thyroid gland whereas secondary hypothyroidism occurs due to diseases of hypothalamus or pituitary gland.

Recognizing Subtle Symptoms

Early detection is crucial for managing hypothyroidism effectively. Pet owners should be vigilant for subtle signs such as unexplained weight gain, lethargy, coat changes, and skin problems (Peterson, 2019). In majority of the cases, the clinical signs are non-specific and consist of a combination of metabolic and dermatological signs. Reduced metabolism leads to lethargy, dullness, obesity and cold intolerance (Panciera, 1994). Skin problems are seen in 60-80% of the affected dogs (Dixon *et al.*, 1999; Panciera, 1994). As thyroid hormone plays a significant role in hair growth, its deficiency leads to alopecia which is bilaterally symmetrical generally observed on trunk, thorax and tail. Other signs associated with hypothyroidism include reproductive abnormalities, nervous symptoms and ocular changes etc., however these clinical signs are not seen as frequently as dermatological and metabolic abnormalities.

Navigating Diagnostic Challenges

Diagnosing hypothyroidism can be complex due to overlapping symptoms with other health issues for e.g., reason of obesity may be overfeeding and lack of exercise. Estimation of free T₄, Total T₄ and TSH should be done to arrive at an accurate diagnosis. Dog with Total T₄ in normal reference range usually has normal thyroid function (if anti-T₄ antibodies are absent). A decrease in free T₄ is a better marker of hypothyroidism than reduced total T₄ because free T₄ is not altered by variation in protein concentration and protein binding. In primary hypothyroidism the lack of thyroid hormones leads to an increase in TSH concentrations due to the inhibition of negative feedback on pituitary gland by thyroid hormones. Thus, a decrease in total and free T₄



along with increased TSH provides the most specific diagnoses for hypothyroidism, however, TSH is not elevated in all the cases of the disease. Response to exogenous thyroxine hormone can also be checked to confirm the diagnosis. Advanced diagnostic tools, including thyroid function tests and imaging studies, are key to accurate assessments (Mooney, 2011). The use of breed-specific reference ranges enhances diagnostic precision, ensuring tailored evaluations for individual dogs.

The Role of Synthetic Thyroxine Supplementation

The cornerstone of managing hypothyroidism is synthetic thyroxine (T₄) supplementation (Graham & Nachreiner, 2013). It should be given before the meal for maximum absorption. Thyroxine can be given at the dose rate of 0.02 mg/kg body weight orally, twice a day initially. This treatment effectively alleviates clinical symptoms and enhances the overall quality of life for affected dogs. To ensure successful long-term management, treatment plans should be tailored to the individual needs of each dog. Consistent monitoring and addressing potential side effects are crucial aspects of this approach (Peterson, 2019).

Conclusion

Cracking the code of canine hypothyroidism empowers pet owners to advocate for their furry friends' health. Early recognition, accurate diagnosis, and informed management are the keys to ensuring that dogs with hypothyroidism lead happy and healthy lives. Stay vigilant, seek professional guidance, and cherish the precious moments with your canine companion.

References

- Dixon, R. M., Reid, S. W. J., & Mooney, C. T. (1999). Epidemiological, clinical, hematological and biochemical characteristics of canine hypothyroidism. *Vet Rec*, 145, 481–7.
- Graham, P. A., Refsal, K. R., & Nachreiner, R. F. (2007). Etiopathologic findings of canine hypothyroidism. *Veterinary Clinics of North America, Small Animal Practice*, 37, 617–631.
- Graham, P. A., & Nachreiner, R. F. (2013). Use of levothyroxine for the treatment of hypothyroidism in dogs. *Journal of the American Veterinary Medical Association*, 243(3), 313-320.
- Kaplan, M. M., & Mooney, C. T. (2013). *Small Animal Endocrinology*. Elsevier Health Sciences.
- Mooney, C. T. (2011). Diagnostic testing for canine hypothyroidism. *Topics in Companion Animal Medicine*, 26(2), 78-84.
- Panciera, D. L. (1994). Hypothyroidism in dogs: 66 cases (1987–1992). *Journal of the American Veterinary Medical Association*, 204, 761–7.
- Peterson, M. E. (2019). Hypothyroidism in dogs: 66 cases (1987–2017). *Journal of the American Veterinary Medical Association*, 254(1), 98-105.
- Scott-Moncrieff, J. C., Nelson, R. W., & Feldman, E. C. (2015). *Canine and Feline Endocrinology*. Elsevier Health Sciences.

