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RETROSPECTIVE STUDY OF SECONDARY ARTERIAL HYPERTENSION IN CATS

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Abstract: *Secondary systemic arterial hypertension is common in older cats and is frequently associated with underlying diseases. This retrospective study aimed to identify the main conditions associated with secondary hypertension and evaluate the epidemiological and clinical characteristics of affected cats. A total of 40 cats diagnosed between January 2023 and December 2025 were included. Systolic blood pressure was measured using the oscillometric method, with a mean value ≥160 mmHg required for inclusion. Most cats (72.5%) were at least 12 years old, and 60% were males. Chronic kidney disease was the most frequent associated condition (45%), followed by hyperthyroidism (32.5%), diabetes mellitus (12.5%), and obesity (10%). In cats with chronic kidney disease, mean systolic blood pressure increased from 167.8 ± 4 mmHg in IRIS stage II to 204 ± 15.5 mmHg in stage IV. The most common clinical signs were weight loss (55%) and polyuria/polydipsia (37.5%). These findings emphasize the importance of regular blood pressure monitoring in older cats and those with predisposing conditions to facilitate early diagnosis and prevent target organ damage.*

Keywords: *cats; secondary arterial hypertension; chronic kidney disease; hyperthyroidism; systolic blood pressure; retrospective study.*

• Introduction

Systemic arterial hypertension is a common clinical condition in cats, particularly in geriatric patients. Unlike in humans, feline hypertension is predominantly secondary to underlying diseases, especially chronic kidney disease and hyperthyroidism. Persistent elevation of blood pressure may cause progressive damage to target organs, including the kidneys, eyes, heart, and central nervous system. Early detection and regular blood pressure monitoring are therefore essential to prevent complications and improve prognosis. The present study aimed to identify the main conditions associated with secondary hypertension and to evaluate the epidemiological and clinical characteristics of affected cats.

• Material and method

This retrospective descriptive study included 40 cats diagnosed with secondary systemic arterial hypertension between January 2023 and December 2025 at the Internal Medicine Clinic of the Faculty of Veterinary Medicine in Timișoara. Inclusion criteria consisted of a mean systolic blood pressure ≥160 mmHg associated with an identified underlying disease. Blood pressure was measured using a CARDELL® 9401 BP oscillometric device. Age, sex, reproductive status, underlying diseases, and clinical signs were analyzed.



Figure 1. CARDELL® 9401 BP oscillometric device used for blood pressure measurements

• Results and discussions

The study included 40 cats aged between 6 and 20 years. Most patients (72.5%) were aged 12 years or older, while 22.5% were between 8 and 12 years old and only 5% were younger than 8 years (Figure 2). Males represented 60% of the study population, compared with 40% females. The predominance of older cats is consistent with previous studies reporting an increased occurrence of systemic hypertension in geriatric feline patients.

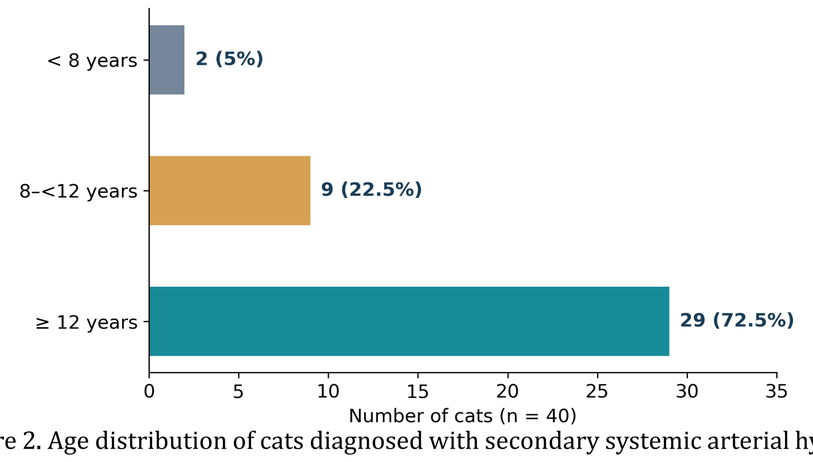


Figure 2. Age distribution of cats diagnosed with secondary systemic arterial hypertension.

Chronic kidney disease (CKD) was the most frequently identified associated condition (45%, n=18), followed by hyperthyroidism (32.5%, n=13), diabetes mellitus (12.5%, n=5), and obesity (10%, n=4) (Figure 3).

These findings highlight the frequent association of chronic kidney disease and hyperthyroidism with secondary systemic arterial hypertension in cats. Systolic blood pressure values varied according to the underlying disease, with the highest values recorded in cats with CKD (Figure 4).

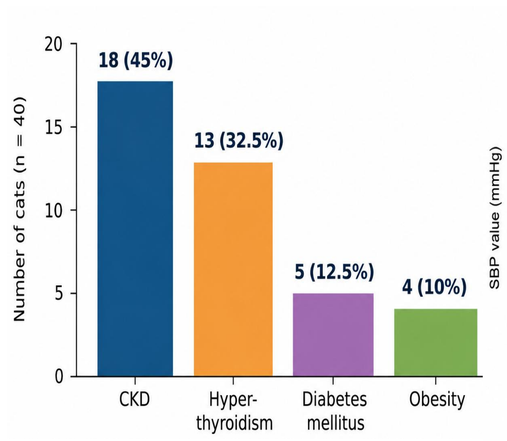


Figure 3. Distribution of associated conditions in hypertensive cats.

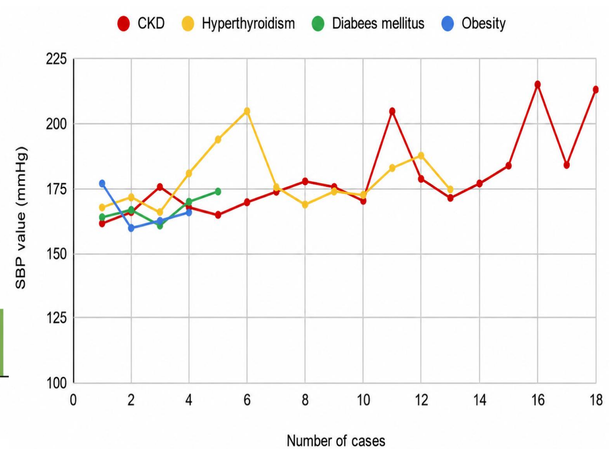


Figure 4. Systolic blood pressure values according to the underlying disease in hypertensive cats.

Cats with hyperthyroidism and diabetes mellitus also showed increased systolic blood pressure values, supporting the importance of regular blood pressure monitoring in cats with predisposing conditions. In the CKD group, mean systolic blood pressure increased with advancing disease severity, from 167.8 ± 4 mmHg in IRIS stage II to 180 ± 17 mmHg in stage III and 204 ± 15.5 mmHg in stage IV (Figure 5). The highest systolic blood pressure recorded in cats with CKD reached 215 mmHg.

The most frequently reported clinical signs were weight loss (55%, n=22) and polyuria/polydipsia (37.5%, n=15) (Figure 6). These signs are commonly associated with chronic underlying disease and may contribute to the clinical suspicion of secondary hypertension. Overall, the results highlight the strong association between secondary hypertension and chronic diseases, particularly CKD and hyperthyroidism, as well as the importance of routine blood pressure assessment, especially in older cats.

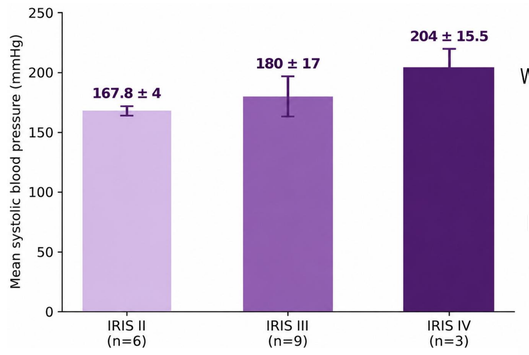


Figure 5. Mean systolic blood pressure according to IRIS stage in cats with chronic kidney disease.

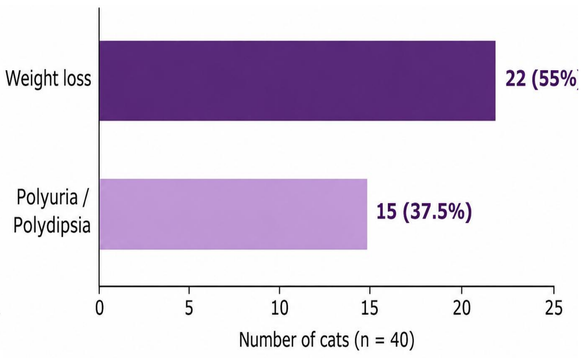


Figure 6. Most frequently reported clinical signs among cats with secondary hypertension.

• Conclusions

Secondary systemic arterial hypertension was predominantly identified in geriatric cats, with chronic kidney disease and hyperthyroidism being the most frequently associated conditions. In cats with chronic kidney disease, systolic blood pressure increased with advancing IRIS stages, highlighting the relationship between renal disease severity and hypertension. Clinical signs were often nonspecific and mainly associated with underlying diseases. These findings emphasize the importance of regular blood pressure monitoring, particularly in older cats and those with predisposing conditions, to facilitate early diagnosis and prevent target organ damage.