

# Xanthinuria Secondary to Allopurinol Treatment in Dogs with Leishmaniosis: Current Perspectives of the Iberian Veterinary Community

Laura Jesus<sup>1</sup>, Carolina Arenas<sup>2</sup>, Marina Domínguez-Ruiz<sup>3</sup>, Paolo Silvestrini<sup>4</sup>, Xavier Roura<sup>5</sup>, Rodolfo Oliveira Leal<sup>6</sup>

<sup>1</sup>Faculty of Veterinary Medicine, University of Lisbon, Lisbon, Portugal; <sup>2</sup>Hospital Veterinario Anicura Valencia Sur, Valencia, Spain; <sup>3</sup>Hospital Clínico Veterinario, Universidad Alfonso X El Sabio, Madrid, Spain; <sup>4</sup>Small Animal Teaching Hospital, University of Liverpool, Liverpool, UK; <sup>5</sup>Hospital Clínic Veterinari, Universitat Autònoma de Barcelona, Barcelona, Spain; <sup>6</sup>CIISA – Centro de Investigação Interdisciplinar em Sanidade Animal – Faculdade de Medicina Veterinária – Universidade de Lisboa

## INTRODUCTION

Xanthinuria is a common adverse urinary effect in dogs with leishmaniosis under therapy with allopurinol.

## OBJECTIVES

- ✓ To investigate current medical approach of the Iberian Veterinary Community (IVC) on prevention and management of xanthinuria secondary to allopurinol therapy in canine leishmaniosis (CanLeish).

## METHODOLOGY

- ✓ An online anonymous survey was conducted (4 to 26 questions).
- ✓ Questions focused on: general information about respondents, allopurinol prescription regimens, therapeutic monitoring, causes for allopurinol withdrawal, adverse effects, xanthinuria diagnosis, treatment, and preventive measures.
- ✓ After internal validation, the survey was uploaded through an online platform and diffused via Iberic social network veterinary groups.
- ✓ Answers regarding xanthinuria diagnosis, management and preventive measures were finally selected.

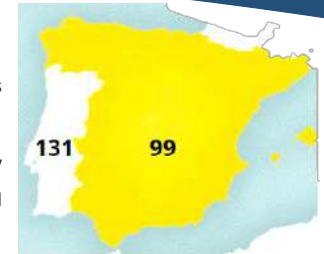


## CONCLUSIONS

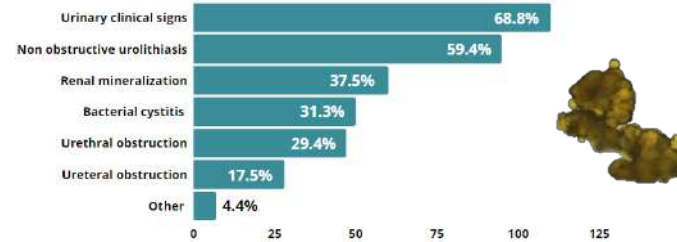
- ✓ The IVC is aware of the high prevalence of xanthinuria as a common complication in dogs with leishmaniosis treated with allopurinol.
- ✓ Although preventive measures are often neglected, clinicians seem to be conscious about the options to manage xanthinuria in dogs with leishmaniosis, under allopurinol treatment.

## RESULTS

- ✓ A total of 230 answers were obtained: 131 from Portugal and 99 from Spain. About 99.6% (229/230) of the clinicians use allopurinol as part of CanLeish treatment.
- ✓ A total of 71.6% (164/229) have identified xanthinuria in dogs with leishmaniosis; 78.7% (129/164) generally diagnose xanthinuria based on identification of crystalluria, 12.2% (20/164) by post-removal urolith analysis, and 5.5% (9/164) based on detection of urolithiasis on abdominal ultrasound.
- ✓ Reported complications associated with xanthinuria included: urinary clinical signs (dysuria, stranguria, pollakiuria) by 68.8% (110/160), non-obstructive urolithiasis by 59.4% (95/160), renal mineralization by 37.5% (60/160), bacterial cystitis by 31.3% (50/160), urethral obstruction by 29.4% (47/160), and ureteral obstruction by 17.5% (28/160) (Graph 1).



Graph 1. Complications associated with xanthinuria.

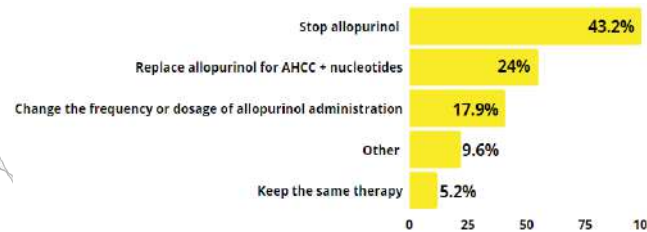


Graph 2. Monitoring of adverse effects of allopurinol treatments.

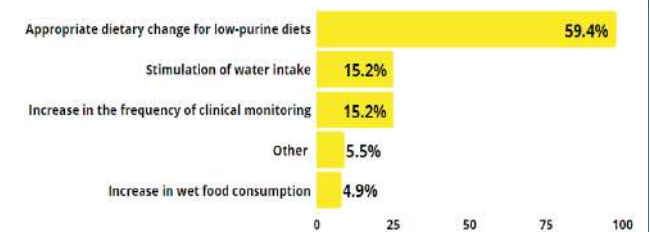


- ✓ Regarding xanthinuria prevention, 75.1% (172/229) of clinicians inform clients of the adverse effects of allopurinol, although only 28.4% (65/229) consider a change to a low purine diet. Concerning monitoring of urinary adverse effects, urinalysis and diagnostic imaging are prioritized by 71.2% (163/229) and 31% (71/229), respectively. Abdominal ultrasound is preferred (94.4%; 67/71), followed by abdominal radiographs (5.6%; 4/71) (Graph 2).

Graph 3. Allopurinol measures taken by clinicians when facing xanthinuria.



Graph 4. Additional measures taken by clinicians when facing xanthinuria.



- ✓ When facing xanthinuria, 43.2% (99/229) of clinicians stop allopurinol treatment, 24% (55/229) switch for an active hexose correlated compound (AHCC) associated with nucleotides, 17.9% (41/229) change the frequency or dosage of allopurinol administration, and 5.2% (12/229) keeps the same therapy (Graph 3).

- ✓ Dietary modification (59.4%; 98/165), stimulation of water intake (15.2%; 25/165), increase in wet food consumption (4.9%; 8/165), and increased frequency of clinical monitoring (15.2%; 25/165), were also implemented (Graph 4).