REVIEW ON THE RISKS ASSOCIATED TO ALLOPURINOL THERAPY IN DOGS WITH CANINE LEISHMANIASIS. CLINICAL CASES.

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OBJECTIVES

The aim of this study was to summarize shortly canine leishmaniasis, its ethiology, epidemiology and immunology, clinical manifestation, diagnostic procedure, and finally, its treatment. Moreover, a very important point was to do an update on the risks associated to allopurinol therapy in dogs with canine leishmaniasis, exemplifying them with four retrospective clinical cases.

WHAT IS LEISHMANIASIS?

Canine leishmaniasis (CanL) is an invasive disease on dogs, caused by *Leishmania spp*. and transmitted by the bite of an infected phlebotomine sand fly. It is endemic in many countries and very common in Mediterranean regions[1].

CLINICAL SIGNS

Main clinical manifestations of CanL are non-specific, such as limphadenomegaly, skin disorders (A, D, E), progressive loss of weight and muscular atrophy (B), apathy, onycogriphosis (C), vomiting, diarrhea, polyuria and polydipsia, ocular (D), renal and articular lesions [2].

Images provided by Hospital Clínic Veterinari UAB.

TREATMENT

There are many protocols of treatment for CanL, but combination of antileishmanial drugs like meglumine antimoniate, administered subcutaneous during 30 days (100mg/kg/24h), together with allopurinol (10mg/kg/12h) administered orally, which is a specifical leishmaniostatic drug, is the most frequently chosen protocol[1].

[1]Kaszak, I.;Planellas, M.; Dworecka-Kaszak, B.: Canine leishmaniasis-an emerging disease. Annals of parasitology, 2015, 61(2): 69-76.
[2]Solano-Gallego, L.; Koutinas, A.; Miró, G. *et al.:* Directions for the diagnosis, clinical staging, treatment and prevention of canine leishmaniasis. Veterinary Parasitology, 2009, 165:1-18.

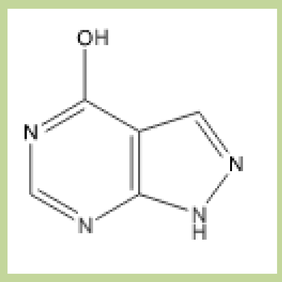
XANTHINURIA

XANTHINE OXIDASE (XO)

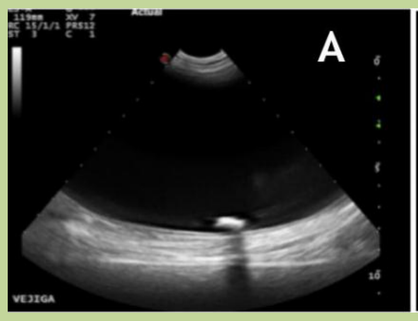
Hypoxanthine + Xanthine → ✕ Uric acid

Congenit: xanthine oxidase deficiency

Allopurinol potentially increases the risk of xanthine uroliths by inhibiting xanthine oxidase enzyme.



This can result in many different manifestations, like urinary sediment and uroliths without giving urinary alterations, or dysuria and severe urinary tract obstructions. Moreover, its consequences are much variable too, such as renal failure or detrusor muscle incompetence.



A: xanthine urocystoliths.
B: renal pelvic mineralization.
C: xanthine urolithiasis causing uretral obstruction.
Images provided by Hospital Clínic Veterinari UAB.

CONCLUSIONS

1. Allopurinol therapy should be correctly monitored periodically through a complete urinalysis, (including sediment) and an abdominal echography, all along the treatment.
2. It is recommended to do a preventive treatment of xanthinuria with a low purine diet, specially in predisposed breeds.
3. Prospective studies and follow-up are necessary to achieve the best outcome we can expect on treatment.