

Proteinuria in Canine Cancer Patients

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In the Literature

Prudic RA, Saba CF, Lourenço BN, Bugbee AC. Prevalence of proteinuria in a canine oncology population. *J Small Anim Pract.* 2018;59(8):496-500.

FROM THE PAGE ...

Loss of protein via the urinary tract can occur secondary to several underlying diseases, including neoplasia. Assessment of the degree of proteinuria in dogs may be helpful for documenting the severity of protein loss, which can help clinicians decide how best to manage the patient.

This study sought to document the point prevalence of proteinuria in a population of dogs with various neoplasms (excluding lower urinary tract neoplasia) and to assess the severity of protein loss. Of the 60 patients enrolled, 51.7% had some degree of

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TABLE

CAUSES OF PROTEINURIA

Prerenal (Overload) Causes	Renal Causes	Postrenal Causes
Immunoglobulin light chains	Glomerular loss	Hemorrhage
Hemoglobin	Tubular loss	Inflammation
Myoglobin		Infection
Strenuous exercise		
Fever		
Seizures		

Continues ▶

proteinuria. Most results were borderline; only 15% of patients exhibited overt proteinuria, and only 2 dogs had a urine protein:creatinine ratio >2.0 (reference value, <0.5).

When evaluating the significance of proteinuria, it is important to review the urine sediment. This is a crucial part of a complete urinalysis and is required for proper interpretation of other variables. Presence of hemorrhage¹ or inflammation² (infectious or noninfectious) in the sample can confound the ability to identify whether presence of protein is due to glomerular leakage or poor tubular reabsorption rather than an active sediment. In this situation, the cause of hematuria and/or pyuria must be identified and addressed, then proteinuria reassessed. If proteinuria persists in the absence of these confounders, it can be assumed that the protein is present due to kidney disease.

In addition, proteinuria must be interpreted in the context of urine specific gravity.² Although a 1+ dipstick reaction might not be concerning in a well concentrated sample, the same reaction in dilute urine should be taken seriously and further evaluated. Other prerenal causes of mild proteinuria (eg, fever, strenuous exercise) must also be considered.

The results of this study suggest that proteinuria occurs frequently in dogs with cancer, although the clinical significance in most cases may be minimal. Establishing baseline protein loss at cancer diagnosis, with subsequent monitoring for progression during therapy, may be warranted to ensure worsening kidney disease does not impact patient quality of life or management of underlying neoplasia. Other biomarkers of kidney disease should also be taken into consideration.

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** Patients identified as proteinuric should have a complete health assessment, including physical examination and diagnostic procedures to rule out underlying neoplasia.
- 2** Proteinuria should be interpreted in the context of an inactive urine sediment. If hemorrhage or inflammation is present, the amount of protein in the sample will be increased.
- 3** Even if proteinuria appears minimal, patients should be monitored for progression, which could negatively impact patient response to cancer therapy.

References

1. Vientós-Plotts AI, Behrend EN, Welles EG, et al. Effect of blood contamination on results of dipstick evaluation and urine protein-to-urine creatinine ratio for urine samples from dogs and cats. *Am J Vet Res.* 2018;79(5):525-531.
2. Meuten D. Laboratory evaluation and interpretation of the urinary system. In: Campbell TW, Allison RW, Thrall MA, Weiser G, eds. *Veterinary Hematology and Clinical Chemistry*. 2nd ed. Ames, IA: Wiley-Blackwell; 2012:356.

entyce[®]
(capromorelin oral solution)

30 mg/mL

BRIEF SUMMARY: Before using this product, please consult the full product insert for more information.

For oral use in dogs only

Appetite Stimulant

Caution: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

Description: ENTYCE[®] (capromorelin oral solution) is a selective ghrelin receptor agonist that binds to receptors and affects signaling in the hypothalamus to cause appetite stimulation and binds to the growth hormone secretagogue receptor in the pituitary gland to increase growth hormone secretion.

Indication: ENTYCE (capromorelin oral solution) is indicated for appetite stimulation in dogs.

Contraindications: ENTYCE should not be used in dogs that have a hypersensitivity to capromorelin.

Warnings: Not for use in humans. Keep this and all medications out of reach of children and pets. Consult a physician in case of accidental ingestion by humans. **For use in dogs only**

Precautions: Use with caution in dogs with hepatic dysfunction. ENTYCE is metabolized by CYP3A4 and CYP3A5 enzymes (See Clinical Pharmacology). Use with caution in dogs with renal insufficiency. ENTYCE is excreted approximately 37% in urine and 62% in feces (See Adverse Reactions and Clinical Pharmacology).

The safe use of ENTYCE has not been evaluated in dogs used for breeding or pregnant or lactating bitches.

Adverse Reactions: Field safety was evaluated in 244 dogs. The most common adverse reactions were diarrhea and vomiting. Of the dogs that received ENTYCE (n = 171), 12 experienced diarrhea and 11 experienced vomiting. Of the dogs treated with placebo (n = 73), 5 experienced diarrhea and 4 experienced vomiting.

To report suspected adverse drug events and/or obtain a copy of the Safety Data Sheet (SDS) or for technical assistance, call Aratana Therapeutics at 1-844-640-5500.

For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at <http://www.fda.gov/AnimalVeterinary/SafetyHealth>

NADA 141-457, Approved by FDA

US Patent: 6,673,929

US Patent: 9,700,591

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