

Chewable Tablets

Brief Summary: Please consult full package insert for more information.

INDICATIONS: Tri-Heart® Plus chewable tablets are indicated for use in prevention of canine heartworm caused by *Dirofilaria immitis* and for the treatment and control of ascarids (*Toxocara canis*, *Toxascaris leonina*) and hookworms (*Ancylostoma caninum*, *Uncinaria stenocephala*, *Ancylostoma braziliense*) in dogs and in puppies 6 weeks of age and older.

PRECAUTIONS: All dogs should be tested for existing heartworm infection before starting treatment with Tri-Heart® Plus chewable tablets. A mild hypersensitivity-type reaction, presumably due to dead or dying microfilariae and particularly involving a transient diarrhea has been observed in clinical trials with ivermectin alone after treatment of some dogs that have circulating microfilariae.

Keep this and all drugs out of the reach of children. In case of ingestion by humans, clients should be advised to contact a physician immediately. Physicians may contact a Poison Control Center for advice concerning cases of ingestion by humans.

ADVERSE REACTIONS: The following adverse reactions have been reported following the use of ivermectin at the recommended dose: depression/lethargy, vomiting, anorexia, diarrhea, mydriasis, ataxia, staggering, convulsions and hypersalivation.

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

HOW SUPPLIED: Tri-Heart® Plus chewable tablets are available in three dosage strengths for dogs of different weights. Each strength comes in convenient packs of 6 chewable tablets.

Store at controlled room temperature of 59-86° F (15-30° C). Protect product from light.

**For Technical Assistance, call
Merck Animal Health: 1-800-224-5318**

Manufactured for: Intervet Inc., a subsidiary of Merck & Co. Inc., Summit, NJ 07901
Manufactured by: Diamond Animal Health, Inc., a wholly owned subsidiary of Heska Corporation, Des Moines, IA 50327

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02260-1

ANADA 200-338, Approved by FDA

Canine Transitional Cell Carcinoma

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In the Literature

Rippy SB, Gardner HL, Nguyen SM, et al. A pilot study of toceranib/vinblastine therapy for canine transitional cell carcinoma. *BMC Res.* 2016;12(1):257.

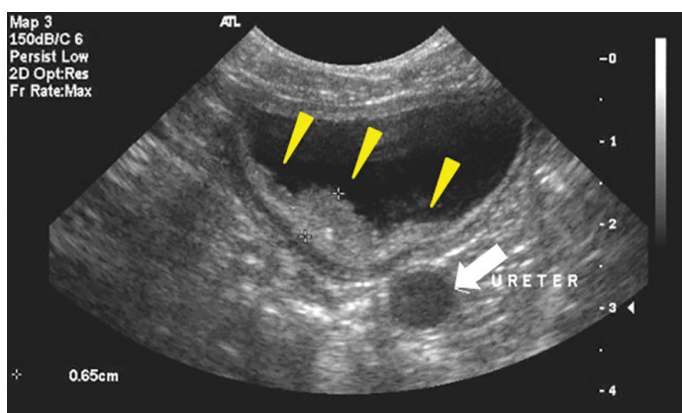
FROM THE PAGE ...

Transitional cell carcinoma (TCC) is the most common tumor of the canine urinary bladder. Identified risk factors for TCC development include heritable genetic factors and environmental exposures.¹ Breeds at the greatest risk for TCC development include Scottish terriers, Shetland sheepdogs, West Highland white terriers, and beagles.²

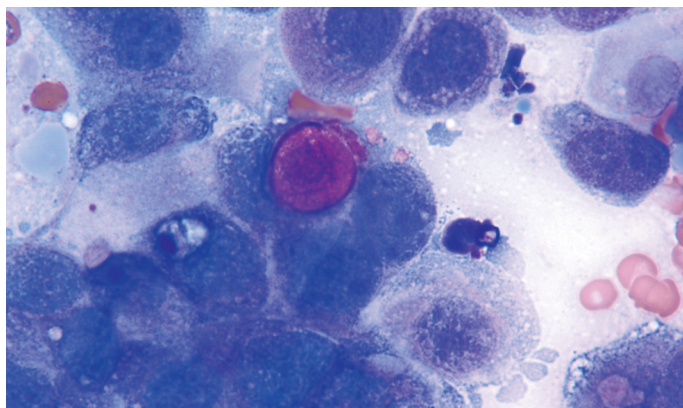
Despite awareness by veterinary professionals, TCC tumors are often locally advanced at diagnosis. The location of disease frequently limits definitive surgical options. As such, most dogs diagnosed with TCC succumb to anatomic and metabolic complications associated with local tumor progression (eg, urinary obstruction, pain, azotemia).³ Given the current limitations in effective TCC treatment, concerted efforts by veterinary clinicians have focused on evaluating novel combination therapies and response-assessment tools for improving canine TCC management.

This preliminary study evaluated the combined anticancer activities of toceranib-vinblastine in managing local tumor growth in the bladder lumen and associated wall structures. Secondly, 2 conventional imaging modalities (ie, ultrasound, CT) were compared for their intra- and interoperator reliability in monitoring changes in primary tumor size. In addition, the respective values of sonographic and CT assessments of tumor response for predicting the duration of disease control were compared.

Although the regimen of toceranib–vinblastine was a tolerable drug combination for most dogs, the documented anticancer activity exerted by toceranib–vinblastine combination did not exceed that of either vinblastine or toceranib when used as single agents. As compared with ultrasonography, CT was identified as a more reliable imaging modality for monitoring local disease progression when recorded by the same or a different operator; however, neither ultrasonography nor CT proved to be clinically useful in predicting durability of anticancer responses.



▲ **FIGURE 1** Classic sonographic findings of bladder TCC in a dog. A tumor mass (**yellow arrowheads**) arising from the deep muscle layers of the bladder wall extends into the bladder lumen, with chronic urinary obstruction resulting in development of hydroureter (**white arrow**). Photo courtesy of Louis-Philippe de Lorimier, DVM, DACVIM (Oncology)



▲ **FIGURE 2** Cytology collected from traumatic catheterization confirming TCC diagnosis in a male dog. Large aggregates of epithelial cells with criteria of malignancy made up the majority of cells microscopically identified. Photo courtesy of Anne M. Barger, DVM, MS, DACVP

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** Clinical signs associated with local tumor progression are the most common life-limiting factors for dogs diagnosed with TCC.
- 2** Combining drugs that exert activity as single agents does not necessarily result in superior anticancer activities.
- 3** Although CT and ultrasonography are useful for monitoring changes in local tumor size, these imaging modalities alone should not drive clinical decision-making. All sources of clinical, diagnostic, and radiologic information should be combined for guidance in clinical management of dogs with TCC.

References

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2. Knapp DW, Glickman NW, Denicola DB, Bonney PL, Lin TL, Glickman LT. Naturally-occurring canine transitional cell carcinoma of the urinary bladder: a relevant model of human invasive bladder cancer. *Urol Oncol*. 2000;5(2):47-59.
3. Mutsaers AJ, Widmer WR, Knapp DW. Canine transitional cell carcinoma. *J Vet Intern Med*. 2003;17(2):136-144.