

Measuring Blood Pressure in Cats

**Rebecca Quinn, DVM, DACVIM
(Cardiology, Internal Medicine)**

*MSPCA-Angell Animal Medical Center
Boston, Massachusetts*

Systemic arterial blood pressure evaluation should be completed in cats with kidney disease, endocrine disease, and critical illness.

In the Literature

Whittemore JC, Nystrom MR, Mawby DI. Effects of various factors on Doppler ultrasonographic measurements of radial and coccygeal arterial blood pressure in privately owned, conscious cats. *J Am Vet Med Assoc.* 2017;250(7):763-769.

FROM THE PAGE ...

Direct arterial measurement is the gold standard method for assessing blood pressure but is often not practical for cats. Indirect methods are more often employed. Mean or average systolic arterial pressure (SAP) in cats varies based on setting and method used, but ranges of 115 to 162 mm Hg are considered normal in hospital settings.¹ Systemic hypertension in cats is relatively common and is usually related to kidney disease or hyperthyroidism.² Less common causes include hyperaldosteronism and diabetes mellitus, or the hypertension can be idiopathic.³⁻⁵

In this study, 66 owned cats (45 healthy, 21 with systemic illness) were evaluated. Each cat underwent both thoracic limb and tail Doppler SAP measurements using standard equipment and recommended technique (ie, calm environment, correct cuff size, appropriate patient positioning⁶). Oscillometric measurements were not obtained. SAP measurements greater than or equal to 90 mm Hg and less than or equal to 150 mm Hg were considered normotensive.

When comparing thoracic limb and tail SAP measurements, the authors found that values were weakly correlated; differing SAP values between sites were not consistently positive or negative in individual cats. When comparing all mean thoracic limb and tail SAP measurements, tail measurements were higher than forelimb measurements.

Variables assessed included age, weight, heart rate, BCS, and muscle condition score

(MCS). Older cats had significantly higher thoracic limb SAP. Cats with higher MCS (ie, more muscle) had lower thoracic limb SAP. Additional data suggested the true relationship between thoracic limb SAP and MCS was the result of age; younger cats had more muscle mass and lower blood pressure as compared with older cats. Tail measurements were not affected by any variables studied. The effect of sex or underlying disease on SAP measurements was not evaluated.

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** Systemic arterial blood pressure evaluation should be completed in cats with kidney disease, endocrine disease, and critical illness.
- 2** Patient stress should be minimized and correct technique should be used to ensure accurate results.
- 3** Doppler SAP measurements should be interpreted cautiously, as variation exists between thoracic limb and tail SAP measurements in each patient. If an SAP measurement falls outside the normal range, the test should be repeated using the alternate location. If a patient's blood pressure does not fit the clinical presentation, other diagnostics that may help clarify the situation (eg, fundic examination, renal values) should be considered.
- 4** Based on the results of this study, tail SAP measurement is more highly recommended as compared with thoracic limb SAP measurement. Tail SAP measurement results are less affected by patient age, BCS, and/or MCS.

References

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MCS = muscle condition score
SAP = systolic arterial pressure

INTERCEPTOR[™] PLUS (milbemycin oxime/praziquantel)

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

Before using this product, please consult the product insert, a summary of which follows:

Indications

INTERCEPTOR PLUS is indicated for the prevention of heartworm disease caused by *Dirofilaria immitis*; and for the treatment and control of adult roundworm (*Toxocara canis*, *Toxascaris leonina*), adult hookworm (*Ancylostoma caninum*), adult whipworm (*Trichuris vulpis*), and adult tapeworm (*Taenia pisiformis*, *Echinococcus multilocularis* and *Echinococcus granulosus*) infections in dogs and puppies two pounds of body weight or greater and six weeks of age and older.

Dosage and Administration

INTERCEPTOR PLUS should be administered orally, once every month, at the minimum dosage of 0.23 mg/lb (0.5 mg/kg) milbemycin oxime, and 2.28 mg/lb (5 mg/kg) praziquantel. For heartworm prevention, give once monthly for at least 6 months after exposure to mosquitoes (see **EFFECTIVENESS**).

See product insert for complete dosing and administration information.

Contraindications

There are no known contraindications to the use of INTERCEPTOR PLUS.

Warnings

Not for use in humans. Keep this and all drugs out of the reach of children.

Precautions

Treatment with fewer than 6 monthly doses after the last exposure to mosquitoes may not provide complete heartworm prevention (see **EFFECTIVENESS**).

Prior to administration of INTERCEPTOR PLUS, dogs should be tested for existing heartworm infections. At the discretion of the veterinarian, infected dogs should be treated to remove adult heartworms. INTERCEPTOR PLUS is not effective against adult *D. immitis*.

Mild, transient hypersensitivity reactions, such as labored breathing, vomiting, hypersalivation, and lethargy, have been noted in some dogs treated with milbemycin oxime carrying a high number of circulating microfilariae. These reactions are presumably caused by release of protein from dead or dying microfilariae.

Do not use in puppies less than six weeks of age.

Do not use in dogs or puppies less than two pounds of body weight.

The safety of INTERCEPTOR PLUS has not been evaluated in dogs used for breeding or in lactating females. Studies have been performed with milbemycin oxime alone.

Adverse Reactions

The following adverse reactions have been reported in dogs after administration of milbemycin oxime or praziquantel: vomiting, diarrhea, depression/lethargy, ataxia, anorexia, convulsions, weakness, and salivation.

To report suspected adverse drug events, contact Elanco US Inc. at 1-888-545-5973 or the FDA at 1-888-FDA-VETS.

For technical assistance call Elanco US Inc. at 1-888-545-5973.

Information for Owner or Person Treating Animal:

Echinococcus multilocularis and *Echinococcus granulosus* are tapeworms found in wild canids and domestic dogs. *E. multilocularis* and *E. granulosus* can infect humans and cause serious disease (alveolar hydatid disease and hydatid disease, respectively). Owners of dogs living in areas where *E. multilocularis* or *E. granulosus* are endemic should be instructed on how to minimize their risk of exposure to these parasites, as well as their dog's risk of exposure. Although INTERCEPTOR PLUS was 100% effective in laboratory studies in dogs against *E. multilocularis* and *E. granulosus*, no studies have been conducted to show that the use of this product will decrease the incidence of alveolar hydatid disease or hydatid disease in humans. Because the prepatent period for *E. multilocularis* may be as short as 26 days, dogs treated at the labeled monthly intervals may become reinfected and shed eggs between treatments.

Effectiveness

Heartworm Prevention:

In a well-controlled laboratory study, INTERCEPTOR PLUS was 100% effective against induced heartworm infections when administered once monthly for 6 consecutive months. In well-controlled laboratory studies, neither one dose nor two consecutive doses of INTERCEPTOR PLUS provided 100% effectiveness against induced heartworm infections.

Intestinal Nematodes and Cestodes Treatment and Control:

Elimination of the adult stage of hookworm (*Ancylostoma caninum*), roundworm (*Toxocara canis*, *Toxascaris leonina*), whipworm (*Trichuris vulpis*) and tapeworm (*Echinococcus multilocularis*, *Echinococcus granulosus*, *Taenia pisiformis*) infections in dogs was demonstrated in well-controlled laboratory studies.

Palatability

In a field study of 115 dogs offered INTERCEPTOR PLUS, 108 dogs (94.0%) accepted the product when offered from the hand as if a treat, 1 dog (0.9%) accepted it from the bowl with food, 2 dogs (1.7%) accepted it when it was placed in the dog's mouth, and 4 dogs (3.5%) refused it.

Storage Information

Store at room temperature, between 59° and 77°F (15-25°C).

How Supplied

INTERCEPTOR PLUS is available in four strengths, formulated according to the weight of the dog. Each strength is available in color-coded packages of six chewable tablets each. The tablets containing 2.3 mg milbemycin oxime/22.8 mg praziquantel or 5.75 mg milbemycin oxime/57 mg praziquantel are also available in color coded packages of one chewable tablet each.

Manufactured for: Elanco US Inc.
Greenfield, IN 46140, USA
Product of Japan

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