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

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.

Doppler SAP measurements should be interpreted cautiously, as variation exists between thoracic limb and tail SAP measurements in each patient. 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


… 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.

INTERCEPTOR PLUS

Caution

Federal (USA) law restricts this product 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 (Ancylostoma caninum), hookworm (Necator americanus), taeniasis (Taenia pisiformis), and adult tapeworm (Taenia multiceps, Echinococcus multilocularis and Echinococcus granulosus) infections in dogs and cats weighing 1.8 kg or more, 1.8 kg or more, 5.5 kg or more, and 5.5 kg or more, respectively. INTERCEPTOR PLUS is not effective against adult D. immitis

MCS = muscle condition score
SAP = systolic arterial pressure