

Why Blood Pressure Monitoring is Important for Veterinarians

The SunTech Medical veterinary monitoring devices provide a method of measuring blood pressure (BP) that is easier, quicker, and less stressful for most animals than standard equipment. Such a device enables veterinarians to provide more BP screening services to those populations that most need it. Measuring and monitoring arterial BP is crucial to understanding patients' cardiovascular status and can help in determining the best treatment approach.¹ BP should be monitored for all procedures in which a patient is anesthetized, in emergency or critical care situations, in general practice, and in patients that have or are suspected to have certain diseases like hypotension.¹

Under anesthesia, veterinary patients are susceptible to cardiovascular complications resulting from the anesthetic drug. In emergency situations, a patient's condition is constantly changing and BP monitoring can act as a key indicator of the patient's status throughout procedures. In general, taking BP measurements during baseline health check-ups can help identify early indicators of disease.¹ In fact, the AAFP recommends including BP as part of a feline patient's "minimum database" starting at age 7.⁴ Additionally, hypotension and hypertension are both conditions concerning low and high BP, respectively, that veterinarians must be aware of.

Anesthetized Patients

When anesthetizing a patient, it is important to keep a close eye on certain patient parameters, like BP. It should be continually assessed and recorded to ensure stability. Should something go wrong, BP is the first vital sign to show rapid changes in anesthetized patients, therefore allowing the practitioner to act early in stabilizing the animal.⁶ Additionally, BP is the most telling parameter of tissue perfusion in animals under anesthesia.⁶ As the standards of care for pets continues to rise, BP monitoring during anesthesia administration is becoming essential. Many vets shy away from investing in high-quality vital signs monitoring equipment due to the lack of accurate, veterinary-specific equipment.⁶ SunTech Medical modules operate with an algorithm targeted specifically for animal patients and therefore can accurately determine the BP of a variety of species.

Routine Monitoring

As of 2007, roughly 72% of American Animal Hospital Association (AAHA) members offered a diagnostic BP

evaluation.⁵ Most clients already believe that the practitioner is monitoring their animal's BP in routine check-ups and, therefore, are willing to pay the additional fee that comes along with this service.⁵ In fact, most veterinarians charge approximately \$25 for BP monitoring which makes the payback period of BP equipment expenditures quite short.⁵

There are several ailments that can be detected early with routine BP monitoring like Cushing's disease, adrenal tumors, and heart disease.⁵ Early detection helps to prevent more dire consequences like cerebral vascular incidents and strokes later on in the animal's life.⁵ Additionally, many animals, especially cats, suffer from "white coat" hypertension. The "white coat effect" is due to the stress associated with visiting the veterinarian's office. In order to verify that a cat is actually hypertensive, some vets will send pet owners home with a BP monitor to obtain readings in a more relaxed setting. The client then returns the device to the veterinarian and the readings are analyzed.⁵ According to Dr. Anthony Carr, DVM, professor of small animal clinical sciences at Western College of Veterinary Medicine, doing this has drastically reduced the number of patients falsely diagnosed with hypertension at his practice.⁵ It is important for pet owners to follow certain procedures when attempting to measure an animal's BP. They should be in a quiet room without other animals. Allow the animal to acclimate for at least 5 minutes before beginning and be sure they are in a relaxed position during the measurements. Additionally, choosing the correct cuff size for the patient is essential to get an accurate reading.⁸ Between three and seven consecutive and consistent measurements should be taken and then averaged to determine the BP.⁵ It is also considered good practice to discard the first measurement to give the cat a chance to get used to the process.

Hypotension & Hypertension

Patients suspected of either of these ailments should have their BP checked consistently to determine treatment, if necessary.¹ Untreated hypotension can result in decreased tissue perfusion and disturb blood flow to vital organs.¹ Patients' cardiovascular systems can quickly decline during procedures, and if the MAP falls below 65 mmHg, renal tissue perfusion diminishes.¹ In cats and dogs, a MAP < 60 mmHg qualifies as hypotensive.¹ Hypotensive patients require consistent monitoring of their BP at least every 30 minutes to determine if therapy is working or

if another, more aggressive form of treatment is necessary.

Regarding hypertension, there are two types: primary and secondary. Primary is caused by an imbalance between cardiac output and systemic vascular resistance.¹ The diagnosis is made when BP readings demonstrate a sustained increase while blood count, serum biochemical profile, and urinalysis are all normal.¹ Secondary hypertension means a patient's blood pressure levels are elevated due to a concurrent disease or certain medications including therapeutic agents such as glucocorticoids, mineralocorticoids, erythropoietin, sodium chloride, phenylpropanolamine, and nonsteroidal anti-inflammatory drugs.¹ Some diseases that are often linked to secondary hypertension in dogs and cats are chronic kidney disease, diabetes mellitus, hypothyroidism, and obesity.¹ In one study, hypertension was found in greater than 5% of apparently healthy older cats. Another found that around 87% of cats with untreated hyperthyroidism and 61% of cats with chronic renal failure also had systemic hypertension.³

Often a cat with secondary hypertension exhibits symptoms in one or more of the following systems:

- Ocular system (sudden blindness)
- Renal system (weight loss, increase in urination)
- Neurologic system (seizures, disorientation)
- Cardiovascular system (trouble breathing)

A *hypertensive emergency* occurs when a hypertensive patient is at risk of end-organ damage or vascular incidents such as cerebral hemorrhage or intraocular hemorrhage.¹

Many veterinary patients can benefit from early detection of diseases like hypotension or hypertension to prevent future catastrophes. Blood pressure monitoring in baseline check-ups is something all veterinarians should include in their general practice. For those practitioners in search of equipment made for animals, the SunTech Vet30 BP monitor can perform motion-tolerant measurements on fidgety patients using an animal-specific Advantage VET BP technology.⁷ Additionally, some SunTech monitors, such as the Vet20 BP Monitor, have a built-in averaging feature to assist users in determining an accurate BP reading on the patient. The SunTech Vet BP Monitors facilitate blood pressure monitoring by making the devices both user and patient friendly.

References

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