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**JANUARY 2014**

## **SYSTEMIC HYPERTENSION 2 - PAGES**

**Description:** Systemic hypertension refers to the **persistent elevation of systemic blood pressure (BP)** and can be classified as primary (essential, idiopathic) or secondary. Persistent damage caused by hypertension is typically noted in the eyes, central nervous system, heart, and kidneys. **In cats**, the most common diseases associated with systemic hypertension are chronic kidney disease and hyperthyroidism, whereas **in dogs** it is chronic kidney disease (especially proteinuric renal disease), hyperadrenocorticism, diabetes mellitus, and pheochromocytoma that commonly cause hypertension. Less typical causes of systemic hypertension in either species include hyperaldosteronism, acromegaly, and use of hypertensive medications (e.g., phenylpropanolamine, excessive thyroxine supplementation).

**Clinical Signs:** Hypertension is often clinically silent, with ophthalmologic changes the most obvious signs. **Ophthalmologic** changes secondary to hypertension are better described in cats than dogs and include intraocular hemorrhage, hypertensive retinopathy, hypertensive choroidopathy, and hypertensive optic neuropathy. **CNS** signs can include seizures, vascular accidents, and changes in mentation. **Congestive heart failure** secondary to hypertensive cardiac changes are rare, but affected animals may exhibit increased sensitivity to fluid administration.

**Diagnostics:** Blood pressure values obtained during diagnostic evaluation must be assessed in conjunction with other clinical findings such as presence of retinal detachment, a history of polyuria and polydipsia etc, as these associated findings may point to the cause of the hypertension or indicate hypertension-associated organ damage. **A single high blood pressure value should never be used to diagnose systemic hypertension in the absence of other clinical data.** Patient distress or stress may artificially elevate blood pressure. Current recommendations is that a systolic blood pressure > 160 mm Hg is indicative of hypertension although the use of antihypertensive medications may not be warranted if blood pressure elevations are mild and underlying etiologies addressed. The minimum database should include physical examination, funduscopic examination, complete blood count, serum chemistry profile, urinalysis with urine protein quantification, and serum T4 assay in the cat.

**Treatment:** Most importantly, any hypertensive medications need to be discontinued. Drug groups that can be used to control hypertension include angiotensin-converting enzyme inhibitors (enalapril or benazepril 0.5 mg/kg PO BID), calcium channel blockers (amlodipine 0.625 mg PO Q24hr in cats, 0.1 mg/kg PO Q24hr in dogs) and beta-blockers (atenolol 6.25 mg - 12.5 mg per cat PO BID, or 0.25 - 1 mg/kg PO BID in dogs). Medications from different groups may be added if original medication is not adequate to control hypertension.

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This article is an excerpt form the upcoming pocket guide offered by SonoPath.com: "The Curbside Guide, Diagnosis & Treatment of Common Sonographically Detected Disease." Available Spring 2014.

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