

## Pulmonary Hypertension & Sildenafil Citrate



Pulmonary hypertension (PH) results from multiple disease processes and is most common in older, small-breed dogs. Clinical presentation includes cough, exercise intolerance, respiratory distress, and/or syncope. These clinical signs can be confused with a primary respiratory pathology and/or congestive heart failure. In humans, radiographic findings for PH can include patchy pulmonary edema and radiographic infiltrates. In dogs, diagnosis is made by echocardiography.

This retrospective study described the clinical and radiographic findings of 10 dogs with PH before and after treatment with sildenafil citrate. Dogs were given a clinical score (0-4) using a

previously validated scale. Radiographs were scored using the vertebral heart score (VHS) and a modified Murray Lung Injury score (used to assess pulmonary infiltrates). The most common clinical presenting complaint was respiratory distress (9/10), followed by syncope (6/10). Murmurs were detected in 7/10 dogs before treatment. After PH was confirmed, dogs were treated with sildenafil and radiographs were obtained 1 to 12 days posttreatment (median, 3.5 days). The median pre-treatment clinical score was 4 (range, 3-4) and the median post score was 0 (range, 0-2). There was no significant change in VHS; however, there was a significant change in the median radiographic scores for alveolar infiltrate following treatment. The authors conclude that sildenafil is well-tolerated and improves pulmonary alveolar infiltrates and clinical signs in older, small-breed dogs with PH.

### Global Commentary

As clinicians, we are frequently presented with dyspneic dogs in our emergency rooms. Often our initial thought

is whether the cause is cardiac or respiratory in origin. Unfortunately, we occasionally have cases that do not respond to treatment as expected. This paper nicely describes an alternative scenario in which pulmonary hypertension causes patchy infiltrates and dyspnea that respond to the phosphodiesterase V inhibitor, sildenafil. Many of these dogs have murmurs so, as cardiologists, we are asked to evaluate them. Although some dogs had tricuspid regurgitant gradients of only 57 mm Hg, all responded to sildenafil with radiographic and clinical improvement. This paper indicates that an echocardiogram should be requested earlier in the diagnostic plan for dyspneic patients.—*Simon Swift, MA, VetMB, CertSAC, DECVIM-CA (Cardiology), MRCVS*

### Source

Kellihan HB, Waller KR, Pinkos A, Steinberg H, Bates ML. Acute resolution of pulmonary alveolar infiltrates in 10 dogs with pulmonary hypertension treated with sildenafil citrate: 2005-2014. *J Vet Cardiol.* 2015;17(3):182-191.

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