

Equine Cardiovascular Therapeutics



Meg M. Sleeper, *VMD*

KEYWORDS

- Congestive heart failure • Valve disease • Dysrhythmia • Atrial fibrillation
- Antiarrhythmic

KEY POINTS

- The most common acquired heart disease in horses include acquired valve disease (mitral and aortic are most common) and atrial fibrillation.
- Appropriate medical management and prognosis requires a complete evaluation, including electrocardiogram (ECG), echocardiogram, and in some cases Holter or exercising ECG.
- In clinical animals, therapy can be initiated before further diagnostics.



Video content accompanies this article at <http://www.vetequine.theclinics.com>.

INTRODUCTION

Signs associated with primary heart disease are due to either inadequate cardiac output (signs include exercise intolerance, weakness, and fainting) or elevated cardiac filling pressure (venous engorgement, jugular pulsations [[Video 1](#)]). Ultimately signs of congestive heart failure (CHF) with fluid retention may develop (subcutaneous edema [[Fig. 1](#)], pulmonary edema). Generally, because of sympathetic activation, most horses with heart failure have an increased resting heart rate. Although long-term prognosis for equine heart failure is poor unless the primary defect can be corrected, heart disease in horses is being treated more commonly than previously. Many therapies are empirical and based on data from other species; however, more information is becoming available regarding their efficacy in the horse. Nevertheless, it is important to remember that most agents used for therapy for heart disease are not specifically approved for use in horses. Those studies that are available have often evaluated only a small number of horses, making it impossible to predict idiosyncratic adverse effects. Moreover, many studies are conducted on healthy horses making extrapolation

Cardiology, Department of Small Animal Clinical Sciences, College of Veterinary Medicine, University of Florida, 2015 Southwest 16th Avenue, PO Box 100126, Gainesville, FL 32610-0126, USA

E-mail address: margaretsleeper@ufl.edu

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Fig. 1. A horse with ventral subcutaneous edema caused by CHF. Note the impression in the plaque of edema caused by a finger indentation. This phenomenon has led to the term *pitting edema*. Subcutaneous edema in the horse often accumulates ventrally, as in this case, in the lower limbs and around the sheath in males.

to horses with heart disease tenuous at best. This article focuses on the current recommendations for the treatment of acute and chronic CHF and the acute and chronic medical management of cardiac arrhythmias in horses.

CONGESTIVE HEART FAILURE

Patient Overview

CHF in horses occurs most commonly secondary to acquired valve disease. However, heart failure in horses can occur because of congenital heart disease, such as a large ventricular septal defect, or any acquired disorder, such as myocardial diseases.¹ See [Table 1](#) for a list of clinical signs consistent with CHF in the horse. Regardless of the underlying cause of CHF, the goals of treatment are to improve cardiac output, tissue perfusion, and oxygenation and to promote diuresis of excessive body fluid thereby improving edema. If available, referral to a specialist is optimal; however, early initiation of medical management is often critical for successful case outcomes and referral is not always an option. Cardiac output is determined by preload, afterload, myocardial contractility (inotropy), and heart rate.

Table 1

Common clinical signs of heart disease in the horse

| Heart Disease | Cardiac Arrhythmia | CHF |
|--|--|---|
| <ul style="list-style-type: none"> • Heart murmur • Heart arrhythmia • Asymptomatic • Weight loss • Poor performance • Exercise intolerance • Abnormal pulses • Weakness • CHF • Death | <ul style="list-style-type: none"> • Heart arrhythmia • Exercise intolerance • Weakness • Collapse • Syncope • CHF | <ul style="list-style-type: none"> • Tachycardia • Exercise intolerance • Weakness • Systemic venous congestion • Jugular pulsations • Subcutaneous edema (pitting edema) • Cough • Tachypnea |

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