TREATMENT OF ATRIAL FIBRILLATION IN HORSES

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Eight draft horses and 1 Anglo-Arabian horse were treated by oral administration with quinidine sulfate. Clinical signs and electrocardiographic observations associated with blood quinidine levels during treatment were evaluated.

The most prevalent clinical sign was poor racing performance (6 cases). The durations of atrial fibrillation (AF) before treatment was considered was more than 1 month at least, and more than 1 year in 2 horses. Quinidine sulfate, at a mean single dosage of 18 g (19mg/kg B. W.) with a range of 8.5 to 30 g (9–29 mg/kg B. W.), was administered 3 to 5 times a day at intervals of 45 to 180 min (mean: 89 min). The total daily dosage ranged from 15 to 90 g (mean: 54 g). The period of treatment required was 1–7 days. Total dosage per head ranged from 45 to 147.5 g (mean: 103 g).

Electrocardiographic findings after the administration of quinidine sulfate, showed a decrease in the fibrillation wave rate (fR), increase in size of the configurations of the fibrillation waves and increase in the ventricular rate (VR). These changes were observed most markedly within 30–90 min after administration.

When quinidine sulfate (50–60 g per day) was administered orally 3 to 5 times daily at about 90 min intervals, blood quinidine levels reached between 3.0 and 5.0 μg/ml and fR decreased from 330–435 to 135–190 beats per minute (bpm). The fibrillation waves changed to coarse and/or independent bifid waves associated with the blood quinidine level rising. During therapy, 5 horses had tachycardia (VR increased more than 120 bpm), and the Anglo-Arabian horse had ventricular flutter that continued for 1 minute.

In 5 of 9 horses, AF converted to normal sinus rhythm (NSR). In 3 of the 5, NSR was found at between 30 min and 2 hr 45 min after the final administration, and blood quinidine levels at the time of defibrillation were 2.5, 5.0 and 5.0 μg/ml. In the other 2 horses, NSR was found the next morning. After conversion, elevation of the ST segment (n=4), wandering pacemaker (n=2) and second-degree atrioventricular block (n=1) were observed. In 3 of 4 cases without defibrillation, AF continued and in the rest, AF changed to atrial flutter.