

Ask the Vet

By Kim Kuhlmann, DVM

Bronchodilators

What are the similarities between clenbuterol for horses and albuterol for people? Is clenbuterol used in the same way, and how common is its use?

Racehorses have a specialized occupation, and thus their own set of specific problems. Due to the nature of their use and their environment, the most frequent problems veterinarians deal with on a daily basis involve two major systems in the racehorse – the musculoskeletal system and the respiratory system. These creatures are quite fragile, and numerous problems can develop over the course of their careers. However, as a practicing veterinarian, the majority of the cases I deal with involve their legs and lungs.

With regard to lung and respiratory problems, it's important to keep in mind that these horses spend much of their time in closed environments – a 12 by 14 ft. box stall. The quality of ventilation in stalls/barns can vary anywhere from poor to quite acceptable, but it still isn't the same as being outdoors.

Horses typically inhale allergens from their bedding and feed, and expose their lungs and throats to many irritants. On the track, they get dirt kicked in their faces and routinely inhale track material. Throw in the fact that running at 35 mph elevates their blood pressure and increases the blood volume flowing through thin capillaries in their lungs, and their respiratory system gets stressed. If a horse eventually bleeds as a result, the stage can be set for a viral or bacterial infection. Chronic repeated “insults” to the lungs can result in diseases such as recurrent airway obstruction (RAO) or “heaves,” or inflammatory airway disease (IAD).

Two of the most commonly used medications to treat these syndromes are clenbuterol (Ventipulmin) and albuterol. Both belong in the same class of drugs known as beta-2 agonists and therefore have some of the same effects; but there are also some significant differences.

Many owners are familiar with these medications since albuterol is quite commonly prescribed in human medicine, and clenbuterol has been the subject of frequent debate in racing circles. Both medications cause bronchodilation, which opens up the airways and allows easier breathing when congestion or mucous are present. They also reduce inflammation in the lungs by decreasing the production of the compounds – “mediators” – that cause

the inflammation. Both work very rapidly when administered.

There are major differences between the two. Clenbuterol has a much more pronounced expectorant activity that clears out mucous and debris from the airway. Clenbuterol is also effective when given systemically in the horse. It can be fed or given orally, and the effects on the lungs occur rapidly and can last for a fairly long period.

Albuterol is not as effective when given systemically. There are albuterol tablets and syrup for human use, but they are poorly absorbed in a horse's stomach. Therefore, albuterol is mainly administered through some sort of inhalant system, directly to the lungs. It works quickly – within minutes – but only lasts for up to three hours.

One side effect common to both drugs is the so-called “anabolic” effect. Some believe that clenbuterol builds muscle mass, much like anabolic steroids. In my opinion, what is actually occurring is a decrease in the percentage of body fat, through increases in lipase activity. Lipase is a compound that, in essence, burns fat. The result is leaner muscle mass, but not more of it.

While albuterol is commonly used and very effective in humans, clenbuterol is the drug of choice when treating respiratory diseases in the horse. In fact, I believe that it is one of the best drugs to be approved for use in the horse in a long time. It is responsible for significantly healthier horses. The healthier the horse, the less downtime and the more we get to see him do what we are in the business for in the first place.

Dr. Kuhlmann has been a practicing veterinarian on the Northern California racetrack circuit since 1983. A native of Colorado Springs, Colorado and graduate of the Colorado State School of Veterinary Medicine, he has served on the board of the Northern California Equine Foundation. He has also owned and bred horses for more than 20 years, most notably California sensation Lava Man.