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EXERCISE INDUCED PULMONARY HEMORRHAGE is a major health concern and cause of poor performance in the equine athlete. While it occurs primarily in Quarter Horses, Standardbreds, and Thoroughbreds worldwide during sprint racing, it is also observed in many other high performance non-racing equine athletes, such as barrel, cutting, reining, roping, polo, cross-country event, 3 day event, show jumping, hunter-jumper, steeplechase, and even draft horses. It is of great concern to the racing industry because of the financial implications resulting from decreased performance, lost training days, necessity for pre-race medication, and banning of horses from racing.

Diagnosis & Treatment

According to the International Veterinary Information Service, Ithaca NY [WWW.IVIS.ORG], EIPH is characterized by pulmonary hypertension, edema in the gas exchange region of the lung, rupture of the pulmonary capillaries, intra-alveolar hemorrhage and the presence of blood in the airways and showing on the nostrils. It seems to be most apparent in steeplechasers, older horses (rather than 2 yr olds), and in mares rather than stallions.

Various forms of diagnostic tests have been used to diagnose EIPH such as endoscopy, tracheal lavage, and bronchoalveolar lavage, with the latter providing perhaps the most sensitive and accurate assessment of its presence and extent. In fact it is so sensitive that BAL studies suggest that hemorrhage occurs in essentially all horses in racing or training. Nuclear scintigraphy, radiography, and echocardiography all appear to have limited diagnostic ability.

The most common treatment of choice is the drug Lasix (*furosemide*) which attenuates the exercise-induced increases in right atrial, pulmonary arterial, pulmonary wedge, and pulmonary capillary pressures as well as the concentration of red cells in the BAL fluid. Also, nasal dilators, nitric oxide and immunoglobulins have been used with varying degrees of success.

Other possibilities

In July 2004, an article entitled "Strengthen Your Bleeder's Lungs" appeared in Horse Journal. Three important points in the article are:

1) Lungs that are oozing capillary blood are greatly diminished in their ability to take up oxygen and eliminate carbon dioxide. The blood also causes an inflammatory reaction that thickens the lung tissues forming adhesions, thus making them even less efficient and more infection prone. While Lasix (*furosemide*), a diuretic, is the most commonly used medicine to lower the blood pressure, it does that by dehydrating the body a bit thus depleting electrolytes. Repeated use can have long term effects on the mineral balance in the body.

2) Increased blood vessel pressure can be induced

from anatomical problems such as small airways, small nostrils, pharyngeal nerve paralysis (roaring) to clamping the horse down with rings or tiedowns to low grade allergies with their accompanying mucus. Interestingly, a Kansas State study concluded that blood vessel pressure has less to do with bleeding than the actual strength of the lung tissue itself and the pressure in the airway.

3) Because of that latter point, the article goes on to suggest working to improve the strength and integrity of the capillaries and reducing allergic reactions. They highly recommend Bioflavonoids and antioxidants including vitamin C, Hesperidin, quercetin, pycnogenols, vitamin E, selenium and other trace minerals.

Using DYNAMITE products

For decades, owners of "bleeders" have been successfully following the above suggestions by utilizing some of the unique DYNAMITE specialty products. Numerous horses have been able to either radically reduce, or even eliminate entirely, their Lasix medication. Active bleeders have responded admirably to this protocol:

Super Stress is Ester C (4x more absorbable than regular ascorbic acid), plus bioflavonoids and blood builders of copper, zinc, iron, manganese, etc. Feed **SS** per label directions of 50 gm loading dose (½ cup) for the first 10 days, then finish out the bucket at 25 gm a day. Spray the feed lightly with water so the powder sticks; most horses consume it quite readily. For those who do not, add a half ounce of **DynaSpark** electrolyte, especially if the horse has been, or is, on Lasix.

Hiscorbadyne is then fed at 25 grams per day probably for the life of the horse; this is identical to the **SS** but without the blood builders.

Trace Mineral Concentrate is added at 20 drops per day (to the feed) for 30 days. This seems to reduce the need to lay the horse off heavy work and competition for 30 days while initial healing takes place which is recommended on the **Super Stress** alone.

For prevention, or healed horses, we suggest feeding the loading doses of both the **SS** and **TMC** for **3 days prior** to the race or event. Then return to the **Hiscorbadyne**. **Do not overuse the SS or TMC or you will risk flattening the horse out.** No horse can maintain peak conditioning forever!

Great "side-effects" of this additional nutrition are not only easier movement due to joint support but also lessening of allergy symptoms such as runny noses and even "heavey" symptoms.

OPTIMALLY THESE SUGGESTIONS will be used in addition to the full DYNAMITE program of free choice grass hay, the four free choice mineral powders, daily **DynaPro**, and training/campaigning levels of **Dynamite Regular** or **TNT**. ■