

## Drugs and Medications Corner: A Healthy Respect

Release: May 13 2009

This special section, Drugs and Medications Corner, will feature a series of articles from the USEF's Drugs and Medications Program and the veterinary community to communicate the latest news to better educate the equine community.

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Many years ago, I was called to see a show hunter discovered to have a "big knee." I found the horse to have moderate heat and swelling with pain on flexion of the left knee. He demonstrated a 3/5 lameness to trot in hand (AAEP scale, head bobbing). The trainer's suspicion was the horse got cast in the stall as it was normal the day before when schooled. I suspected a severe contusion (bruise). I suggested radiographing the knee, but the owner and trainer declined. I administered a 500mg dose of Banamine® (flunixin meglumine), a newer drug at the time, and a 20 mg dose of Azium® (dexamethasone), told them to ice and poultice the knee and hand walk him only for exercise. I dispensed four packages of Banamine granules for the horse to receive over the next two days (one package twice daily).

Two days later, the swelling in the carpal region (knee) had subsided remarkably, and the horse was trotting soundly. He was, of course, still getting Banamine orally, so I instructed the trainer to stop with that morning's dose. I told them to be patient about working the horse. I did not have a comfortable feeling about the analgesic potency of the medication the horse was receiving. I was probably being over cautious, but they agreed to my request. I asked for an update the next day. Thursday afternoon I received a call; he was again lame. I recommended continuing ice and keep him confined, and I would return Friday morning to examine and radiograph him (they agreed).

Upon examination, I again found some heat and mild swelling in the upper left carpus and again 3/5 lame. We performed radiographs and recommend again putting the horse on Banamine orally and continuing supportive care. I suggested the horse be confined with no exercise until the radiographs were developed. I expected a small chip or just a lot of edema under the skin. To my surprise, the radiographs showed a spiral fracture of the radius (forearm) from the radial-carpal joint at the knee to the elbow! This horse was sound on a USEF legal level of Banamine (although being split into twice daily doses). Had I allowed that horse to work on Wednesday when it appeared normal or had allowed it to just remain on medication, a serious disaster would have occurred. As things turned out, following consultation with Dr. Bud Fackelman at Tuft's University, we confined the horse for 3 months and all healed well with no surgical intervention.

Needless to say, I was left with a healthy respect for the analgesic potency of Banamine.

Banamine (flunixin meglumine) is a non-steroidal anti-inflammatory drug (NSAID) that reduces inflammation and pain by suppressing the chemical mediators of the inflammatory reaction. It is one of several NSAIDS for use in horses. Inflammation can occur from acute trauma or more chronic wear and tear. Suppressing inflammation may have a disease modifying effect and be good for the patient. These drugs do not work on the central nervous system and suppress sensation or perception. Horses on NSAIDS are not really "doped." The USEF has long supported a therapeutic medication rule to protect the welfare of the horse by allowing horses in competition to receive medication for specific medical conditions that will not seriously affect performance or be a threat to their welfare. This good rule has allowed for suddenly sick horses to be appropriately treated with specific medications, recover and still compete. Mildly arthritic horses have still had a useful purpose when made comfortable. Under this rule such horses are not in violation of medication regulations. It has been the opinion of the USEF veterinary committee that if such horses are otherwise normal, then they should be allowed to compete. Because of the common use of NSAIDS many horseman have become complacent about the relative potency of these medications. We also have to factor the horse's phenomenal ability to overcome discomfort and function well athletically despite musculoskeletal pain.

In the later 1980's, veterinarians recognized the combination of phenylbutazone and flunixin meglumine was extremely potent as an analgesic combination and perhaps horses too seriously injured might appear to be sound enough to compete. It was also recognized this combination carried the risk of serious damage to the gastrointestinal tract and possibly the kidneys. As a result, USEF banned the use of "Bute" and Banamine in combination, but did allow the concurrent use of either one of these drugs with other approved NSAIDS, i.e., naproxen, meclufenamate, and ketoprofen.

I had the opportunity in my veterinary practice during the 1990's to begin performing gastroscopies in adult horses due to colic and poor performance. We found greater than 63% of the hunters, jumpers and dressage horses examined had equine gastric ulcer syndrome (EGUS). This work was published by my practice in 2001. It was not uncommon that many horses we scoped had been receiving various NSAIDS for competition. Our concern was again raised that NSAIDS of any type (especially in combinations) may contribute to the development of EGUS. During the same time period, we were also frequently recognizing mild to moderate colon problems more frequently, and wondered if some of this was related to NSAID use. Certainly we knew that high doses of phenylbutazone could cause colitis, but there was little published to implicate other anti-inflammatories. It has since come to light that combinations of NSAIDS do have an additive effect related to the inhibition of certain enzymes. Some of these enzymes help maintain the health of the stomach and intestinal lining or "mucosa." When the enzymes are inhibited, the protective mucous coat is reduced and more vulnerable to erosion and ulceration from acids and irritants. Combinations of NSAIDS inhibit mucosal protection and increase susceptibility to ulceration. Ulceration leads to poor appetite, function, performance, and colic.

Years ago, we proposed a one NSAID rule to the general membership out of welfare concerns for the competitive horse. Our committee was concerned the "Bute-Banamine" combination was one of several potentially dangerous combinations horses were "legally" receiving prior to/during competition. We now have data to substantiate our concerns. Horsemen need to know that the frequent use of such combinations is a real health hazard. The American Association of Equine Practitioners (AAEP) has officially recommended the use of only one NSAID for therapeutic use in non-racing performance horses.

I ask skeptics to tell me when was the last time a doctor put him or her on a combination of NSAIDS for a musculoskeletal problem? It's not done because of potential toxicity. These meds are really quite potent when properly dosed. I see many horses that "just aren't good enough on one medication" that are, in fact, not being adequately dosed. Body weights are under estimated and the appropriate dose of one medication is not administered. Very few horsemen and owners take advantage of that oral phenylbutazone can be dosed twice daily per USEF regulations and works better that way! Same goes for meclufenamate (the old "Arquel"). If medications were used correctly, one medication may well be just fine. From a welfare standpoint, we must ask it it's justifiable to give two drugs. Horsemen and animal advocates alike should ask "if the horse needs that much medication, should he be competing?"

There is a new medication now approved for horses and listed as not prohibited by USEF. Firocoxib (Equioxx/Merial) is a newer "COX-2" inhibiting NSAID that has less effect on gastrointestinal tracts when properly dosed than the older "COX-1" inhibiting NSAIDS. It offers hope for horses that have a problem with more traditional NSAIDS. There appears to be a considerable margin of safety related to gastric ulceration or colitis, and analgesic efficacy is acceptable. How this medication will "catch-on" remains to be seen.

We need to re-examine current practices and look at current trends in medication of show horses. Certainly, the vast majority of show horses are not receiving double NSAIDS if any at all, but some do. Some stables routinely medicate horses to show in a regimented fashion with pre-determined drugs that trainers, owners or veterinarians feel they need in order to compete at their best. In some instance, they may be correct, but in many it's done because of fear of not doing enough and not keeping up with competition.