

# **Bute & Banamine®: Commonly Used & Misused in Horses**

*“Hey Doc... my horse has been colicky since last night. I gave her some Banamine® and she seemed OK for a while, but now she doesn't look so good...”*

This scenario is unfortunately still common in my vet practice. Although my established clients know to call me before administering these medications, there are many horse owners who regularly use these two common but poorly understood prescription drugs without any veterinary guidance. Often, things work out fine, but in some cases, unguided use of this drug causes catastrophic results.

## **Bute & Banamine – Commonly Used & Misused in Horses**

“Bute” (phenylbutazone) and Banamine® (flunixin meglumine) are the most commonly used non-steroidal anti-inflammatory drugs (NSAIDs) in the horse. They are very useful drugs used for a variety of conditions and signs.

The NSAIDs for horses are prescription drugs, meaning that they can only be bought legally with a veterinarian's prescription. Despite this, they are found everywhere in the horse world, and they are often administered to horses without veterinary oversight and without any knowledge of drug action or potential side effects.

## **WHAT IS INFLAMMATION & WHY STOP IT?**

Inflammation is a natural, intricate series of biochemical reactions that takes place in all animals as a response to injury. Inflammation, the first stage of healing, involves complex reactions between local damaged cells, blood vessels, inflammatory cells and biochemical signals sent and received from cells both near the site of injury and far from it. The first results of inflammation include opening of blood vessels to the area (reddening and heat), increased leakiness of blood

vessels (swelling), and attraction of infection fighting white blood cells to the site.

Products of inflammation include prostaglandins and other inflammatory “mediators” that help bring about these effects. Some of these mediators directly cause pain. All of these products of inflammation are intended to rid the body of infection or injury, and to prepare it to for healing.

Inflammation is a natural process and it is critical for survival. The problem is that often this process becomes excessive, creating a vicious cycle and causing more tissue damage and pain than the injury itself might.

This is where anti-inflammatory drugs are helpful. Their role is to dampen inflammation by reducing the formation of these mediators, and thus reducing the signs of disease (swelling, pain and fever, for example) while still allowing healing to take place.

#### NON-STEROIDAL ANTI-INFLAMMATORY DRUGS – “NSAIDS”

Bute and Banamine® both belong to a class of drugs known as non-steroidal anti-inflammatory drugs (“NSAIDS”), which includes familiar human drugs like aspirin and ibuprofen. Less commonly used equine drugs in this class are firocoxib (Equioxx) ketoprofen, carprofen, naproxen and many others.

These drugs moderate inflammation by stopping the formation of prostaglandins, which are pivotal mediators of inflammation. By doing this, they also reduce the formation of certain pain-causing products of inflammation. But anti-inflammatory drugs do much more than simply control pain. They also reduce swelling and fever. They have value in treating a wide range of conditions in horses, from abdominal pain (colic) to joint injury and laminitis.

NSAIDS reduce inflammation by blocking prostaglandin synthesis. Prostaglandins come in many types. Some are products of the inflammatory cascade, while others have vital maintenance functions in the body. For example, one type has

the role of protecting the stomach and intestinal lining from acid and digestive enzymes. This same prostaglandin has a protective role in the kidney. Unfortunately, NSAIDS not only decrease the production of “bad prostaglandins” of inflammation, they also reduce the formation of these “good prostaglandins” and can cause problems to organs normally protected.

In recent years, new types of NSAIDS have been developed. Increased safety and fewer side effects are advantages of these newer drugs. They are called “selective” meaning that they are formulated to target the “bad” prostaglandins of inflammation and spare the protective ones.

Currently, the most prominent of these in the equine world in the United States is firocoxib (Equioxx). Having used the drug now for a number of years, I find that it too has a niche in my vet practice. I use it for longer courses of administration or when I am especially concerned about side effects. But no drug has yet provided a perfect balance of great effectiveness and excellent safety. Bute and Banamine® remain the mainstay of anti-inflammatory therapy in the horse.

The vast majority of horses treated with these medications have no noticeable problems from their use. On the other hand, all NSAIDS have potential side effects that include:

- Intestinal and stomach side effects including gastric and colonic ulcers. Foals are especially sensitive to the intestinal side effects and easily develop ulcers from the use of these medications.
- Kidney problems. This is especially true of young horses, but caution should always be used, especially in old horses and those that are otherwise ill or dehydrated.
- Importantly, NSAIDS have the ability to “mask” a problem, making it look less severe than it really is and give cause for false hope and delayed treatment.

For these reasons, it is very important to consult your veterinarian before you administer these drugs to your horse.

#### “BUTE” – PHENYLBUTAZONE

Phenylbutazone (a/k/a butazolidin) is primarily used to relieve musculoskeletal pain and inflammation in the horse. Bute comes in several forms including an injectable liquid for intravenous dosing only. It is most commonly found in oral forms: paste, tablets and powder. Used correctly, bute is a powerful and effective means of relieving pain and inflammation. Nevertheless, there are potential side effects.

- Bute is unsafe in all horses at high doses for long periods of time.
- Some horses are much more sensitive to bute than others and may show side effects to smaller amounts.
- Bute is considered more likely to cause ulcers, especially in the large colon, than Banamine® and other NSAIDS.
- Bute is processed, inactivated, and removed from circulation by the liver and kidneys. Young horses have not fully developed their ability to process this drug, and tend to accumulate toxic doses of it. The same concern applies to horses with underlying kidney or liver disease.
- Bute is highly effective for treatment of lameness. As a consequence, it can mask signs of mild or moderate lameness. A horse with a serious musculoskeletal injury may over-exert, and thus worsen the injury.
- Bute is somewhat less effective than Banamine® at controlling abdominal pain (colic) but can still be useful.

Non-veterinarians should not use the injectable form of this drug. It is for intravenous use only, and must never be given in the muscle. It is severely damaging to tissues if even a

small amount escapes the vein during injection. Severe swelling develops and the tissue may even die and slough out, leaving a huge open wound that can take months to heal.

Bute at a low dose can be useful and quite safe for long-term maintenance of horses with chronic pain. There are now safer (although more expensive) alternatives for longer-term treatment.

General guidelines for using bute:

- The best option is always for a veterinarian to examine any undiagnosed lameness or disease process.
- When you give a dose of bute to a horse without veterinary oversight, recognize what you are doing. You are temporarily relieving inflammation and pain, regardless of the diagnosis.
- If you do plan to use bute to try to treat undiagnosed lameness, ask your vet for an appropriate dose for pain control and what to look for to determine treatment effectiveness.
- Confine any lame horse treated with bute in a small area, to prevent worsening of injury due to overuse. Do not force exercise while on bute.
- Do not use the injectable form of this drug because of the dangers of improper injection.

For clients that understand these concerns: I dispense oral bute paste, powder or tablets to my clients for whom I have a valid VCPR (Veterinary-Client-Patient Relationship) as needed for treatment.

**BANAMINE® – FLUNIXIN MEGGLUMINE**

Banamine® is a trade name for the anti-inflammatory drug flunixin meglumine. Banamine® was the only brand of this drug available for many years. As a result, the brand name stuck, despite the fact that the drug is now available generic from many manufacturers and has many different trade names. It is

available in injectable solution for IV use, a paste formulation, and granules. Although the injectable drug is intended for IV use, many horse owners give flunixin intramuscularly, and the injectable solution is actually also absorbed given orally (extra-label use). This drug is somewhat irritating to the tissues when given in the muscle and in rare cases can cause significant muscle damage and severe bacterial infection.

Banamine® is best known for its use in horses with abdominal pain – colic. No doubt, this drug is a potent pain reliever and it has extra anti-inflammatory benefits that make it especially good for treating intestinal problems. It is thought to break the pain-dysfunction cycle that occurs commonly in colic cases, thereby allowing the gut to regain function.

Unfortunately, this drug is also excellent at masking the signs of colic, giving horse owners the false belief that they have “cured the colic” only to find their horse is critically ill or dead the next day.

Colic is not a disease but is the horse’s way of demonstrating abdominal pain. If the cause of colic pain is simply gas or a spasm, a “simple shot of Banamine®” may be all it takes to break the cycle and solve the problem.

If, however, there is a mechanical problem in the gut such as a severe feed impaction or mechanical displacement, Banamine® might temporarily make the horse look better but does nothing to fix the underlying problem. Unfortunately, this improvement can mislead horse people into believing their horse has been cured. The time wasted thinking that the horse has improved can be the difference between life and death.

Guidelines for using Banamine to treat horses showing signs of colic (abdominal pain):

- First, call your vet to alert them to the colic episode and to the fact that you are giving Banamine®. Decide

whether or not you will take a wait and see approach or will have a vet call. The safest thing is to have your vet examine your horse.

- Take away all feed until your vet recommends replacing it. Once the horse looks better, only offer what fits in the palm of your hand, and only to test appetite.
- Assuming the horse looks normal after the shot, monitor them every 1-2 hours, paying particular attention to attitude and appetite, intestinal sounds, heart rate and gum color. See the Whole Horse Exam (WHE) (for more info on the WHE, see our website).
- The masking effects of Banamine last 6-12 hours. Your horse could return to colic pain when the pain relieving effects begin to wear off.
- If a horse seems completely normal and with normal appetite past 8-12 hours post-administration, chances are that the problem causing colic is resolved. This is when slow return to feeding (as per the advice of your vet) can commence.

## CONCLUSION

Bute and Banamine® are extremely important drugs in equine medicine. They offer excellent anti-inflammatory and pain relieving effects for horses. But they must be used appropriately. You should understand the basic concepts of how these drugs work, their strengths and limitations. Always talk to your vet before you administer these drugs.

A veterinarian should evaluate any horse with persistent colic signs or other illness, in order to diagnose the underlying cause and determine whether other types of medical or surgical treatments are required.

By Douglas O. Thal DVM Dipl. ABVPBoard Certified in Equine PracticeThal Equine LLCLast Updated May 2014