

## Be Aware

Administering Banamine at home can lead to serious complications

by Kimberly French

**S**o your horse won't eat, is pawing at the ground and wants to drop down to roll. You feel your stomach drop to your toes and your heart seems like it ceases to beat. Your horse is exhibiting the early stages of colic and you frantically dial your veterinarian's phone number, only to receive her voicemail or hear she just can't make it out there for several hours.

What's the next step?

More than likely it's grabbing that bottle of Banamine that you have sitting on the shelf in the tack room for exactly this kind of situation. After all, you have seen it done—and even been instructed by your veterinarian on how to administer this medication—under these very circumstances.

There's not a second to lose. Your horse is not only in pain, but may lose his life to a disease that has less than the best recovery statistics, so you insert the needle with the exact amount you were told and within a very short period of time, you can actually breathe normally again because your horse seems to be relieved of his pain. It really did do the trick, but why?

"Banamine (flunixin meglumine) is a member of the very important class of drugs referred to as nonsteroidal anti-inflammatory drugs, or NSAIDs," said Dr. Patty Hogan of Hogan Equine Clinic in Cream Ridge, N.J. "Phenylbutazone and Ketoprofen belong to this class as well. They are potent pain relievers and also inhibit the body's inflammatory cascade that is naturally set in motion when there is trauma, disease, or inflammation, and sepsis.

"Banamine has a reputation for being particularly effective for decreasing pain and swelling associated with soft tissue inflammation. It is particularly ef-

fective at relieving the mild abdominal pain and cramping that is associated with most types of colic."

**The veterinarian arrives within several hours, evaluates the horse and determines he does need to come into the clinic to be treated for mild colic. After several days and the appropriate treatments, he returns home, but now you seem to have a new problem on your hands. He's**

lame in his left hind and the site where you have injected the Banamine is now swollen, as well as hot to the touch. He even has a slight fever and is rather listless.

What is the problem? You thought everything was fine now, but the very injection that supplied your horse with the initial relief from his ailment may be the very thing that has created an entirely different and significant problem.

How could one little shot that you have seen veterinarians use so routinely cause such a serious problem?

"Technically, Banamine should be used by or under the supervision of a veterinarian," Hogan said. "It is a drug that can be problematic if abused, overdosed, or used in situations where the effects of the drug may mask important clinical signs that would require more aggressive therapy or additional diagnostics.

"Additionally, Banamine should only be given intravenously and that may be difficult in situations where the person giving the injection is not experienced with IV injections, or the horse is uncooperative or too painful to allow safe and accurate administration of the drug.

"It is easy to inadvertently give the injection intra-arterially into the carotid artery, as this vessel lies directly underneath the jugular vein and in any of the above situations this dangerous event could occur. This may result in death or serious injury to the horse or the handler."

**While most people would inject Banamine in a horse's neck or administer it orally as a paste, it can be given to the horse through a muscle which raises another cause for concern.**

Banamine injections in this fashion are one of the primary causes of



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clostridial myonecrosis in horses, as it can cause Clostridium to proliferate from damage and irritation of the muscle tissue. If this bacteria is situated in this particular area, it flourishes and creates infection in as well as impairs other nearby tissues. Once this situation reaches a significant level, it then becomes clostridial myonecrosis.

“If the bacteria name Clostridium sounds familiar, it’s because this type of bacteria is responsible for two commonly known diseases which you have likely heard of: tetanus and botulism,” wrote the Woodside Equine Clinic veterinary staff on their blog “Diaries of a Veterinary Intern” at [www.woodsidgeequineclinic.com](http://www.woodsidgeequineclinic.com) on April 18, 2013. “Tetanus is caused by the bacterium Clostridium tetani, while botulism is caused by Clostridium botulinum. In the

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Dr. Patty Hogan

case of clostridial myonecrosis, there are a few different species of the Clostridium bacteria which may be the cause. While the species names are not particularly important, the characteristics of clostridial bacteria are. The bacteria are anaerobic, meaning it thrives in environments which lack a good oxygen supply. Therefore, it will grow well within damaged tissue that is no longer receiving normal blood flow and is subsequently poorly oxygenated.”

Hogan recommends that Banamine not be given to a horse intramuscularly for any purpose for this very reason.

“Banamine should only be given intravenously and the most logical site for administration is the left or right proximal jugular vein,” she said. “Banamine is often erroneously given intramuscularly. Unfortunately, it is actually labeled for IV or IM use on the packaging, making it confusing for the horse owner.

“Due to its pH, Banamine is a very irritating substance if given outside of a vein. When given in the muscle, the irri-

tating effects of the solution causes some local tissue necrosis/death. This local tissue destruction is very vulnerable to colonization by bacteria and often bacteria are inadvertently carried in with the needle, resulting in the formation of some very deep and destructive abscesses.

“One bacterium in particular, the Clostridium family, is very opportunistic for this situation and has been linked to some severe, life-threatening abscesses as a direct result of intramuscular Banamine administration.”

**Symptoms of clostridial myonecrosis** can develop within several hours of the Banamine injection or may take up to several days. Signs of the disease include fever, loss of appetite, a large swelling at the injection site, lameness, swelling that goes down into the leg area and a crackling noise if a horse’s skin is touched where the gas the bacterium produces is present.

“An affected horse will usually suffer a rapid deterioration of health and might show signs of colic, poor circulation and toxemia,” wrote Dr. Tracy Norman in *The Horse* magazine on Jan. 11, 2006. “Many untreated horses die within 48 hours of the onset of the clinical signs.

Usually a history including a soft tissue puncture or injection and physical exam findings are enough to raise a veterinarian’s suspicion. Other diagnostic tests that are helpful in confirming the diagnosis are ultrasound, complete blood count, blood chemistry and clotting profile.”

The disease is treated by using antibiotics to kill the bacteria, opening the swelling to expose it to oxygen and then possibly removing damaged tissue, then watching and waiting to see if the treatment was successful. Surgical removal of tissue may have to be employed several times to extract all that was destroyed and the horse may require IV fluids for them to remain hydrated.

Even with aggressive treatment, the recovery rate is far from outstanding, so it’s best to let the vet do the treating in this instance.

Kimberly French is a freelance writer living in Kentucky. | To comment on this story, e-mail us at [readerforum@ustrotting.com](mailto:readerforum@ustrotting.com).