

Indications and options for pain management in the horse

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Introduction

Colic and lameness are two of the most clinically and economically important medical problems facing horses and their owners. Every year, approximately 2.4% of horses in the United States experience at least one episode of colic, costing owners approximately \$115 million, and 2.8% of horses become lame, costing owners between \$678 million and \$1 billion in veterinary care, lost training time, loss of use, or death of the horse. Management of pain is a major part of the treatment for each of these conditions, and the veterinarian's ability to manage severe pain is an important aspect of equine medicine and welfare.

Many pain-killers available for use in the horse have side effects including stomach ulcers, diarrhea, kidney failure, and constipation. Horses in the intensive care unit often display severe pain that is not responsive to a single drug but multiple drugs used together seem to improve the comfort of this population of horses. This talk will focus on recognition of pain in horses and currently available strategies for pain management.

Pain assessment

When assessing visceral (gut) pain in animals or non-verbal humans (such as children), one must remember the differences from pain assessment in human beings. In people, pain is typically evaluated by the patient's perception or self-assessment. In animals and non-verbal humans, pain assessment is always based upon the observer's perception. Thus, when addressing an animal's status, one must remember inherent differences based upon species, age, sex, genetics, environment, source [visceral (gut), somatic (musculoskeletal), neuropathic (nerve)], and duration of the stimulus.

Severe pain is often obvious, as is seen with moderate to severe colic (when horses often roll, paw, or kick at their sides) or with severe lameness (such as an obvious limp at a walk). But, pain can be much more subtle. For example, some horses with gastric ulcers have a decrease in performance or appetite as their only clinical sign, some horses with mild colic will curl their lip after eating, or horses with subtle lameness will resist lead changes.

Because of the inherent degree of subtlety and subjectivity, pain scoring systems can be useful when either evaluating new treatments or comparing disease processes or treatments between different veterinarians or clinics. In addition to scoring systems, some studies will also use continuous video assessment of horses, which can provide very meaningful information over a more prolonged period of time. Such video allows for quantification of the time spent performing tasks such as the actual time spent in a particular location within the stall, eating, lying down, and behaviors such as vocalizing, stomping feet, and shifting weight.

Management

Although specific diagnosis and treatment of the underlying cause for colic or lameness is important, pain control is one of (if not the most) important short-term goals, especially if either condition is severe. Regardless of the initial cause of colic, pain itself can result in decreased motility of the gut, and providing pain relief can break the cycle of decreased motility.

While many of the available pain relievers disrupt motility, the benefits of analgesia (pain relief) typically outweigh the negative consequences of the drugs.

Non-steroidal anti-inflammatory drugs (NSAIDs) are usually the initial therapy of choice for gut pain. Examples of these include phenylbutazone (bute), flunixin meglumine (Banamine), ketoprofen (Ketofen), firocoxib (Equioxx), and several others. These drugs are very useful as they treat inflammation, which is often present in many causes of pain. These drugs can be given either orally or as an injection, which also makes them desirable. Major side effects of these drugs are stomach ulcers, kidney failure, and right dorsal colitis, which is an inflammatory problem in the large intestine that often results in colic and a loss of blood protein.

Few other pain killers can be given orally to horses. Thus, most other drugs are reserved for treatment by a veterinarian and are typically used for more severe pain. Several examples will be discussed, including alpha-2 adrenergic agonists (such as xylazine (Rompun), romifidine (Sedivet) and detomidine (Dormosedan), and opioid drugs. Alpha-2 agonists can provide excellent sedation, analgesia, and muscle relaxation. These drugs have a relatively short duration of action (20-60 minutes). The major adverse effect of these drugs is decreased gut motility, and it is important to note that the sedative effects typically outlast the analgesic effects of these drugs.

The opioid drugs morphine, fentanyl, and butorphanol (Torbugesic) have been used in horses with varying success. Opioids are most commonly used combined with another agent, such as an alpha-2 agonist. Butorphanol is likely the most widely used opioid and can have the best documented success as an analgesic agent. Fentanyl, which is available as a prolonged release skin patch, would be very desirable. But, recent experimental work has demonstrated that it is not a good analgesic in the horse, unlike in other species. As with other drugs, opioids have well-known disruptive effects on gastrointestinal motility.

Summary

Overall, owners or trainers are often in the best position to evaluate an individual animal's level of pain. This is so as they are most familiar with the horse's normal behavior and habits, therefore they can best judge when those behaviors become abnormal.

So, understanding your horse's normal habits and demeanor and relaying that information to your veterinarian is critical to the team approach to successful pain management. In addition, it is important to understand that the pain relief options your veterinarian can leave for on-farm administration are limited. When these drugs are either not successful or no longer successful for management of your horse's pain, additional steps are likely necessary to diagnose and/or treat the problem at hand.