Managing pain in horses

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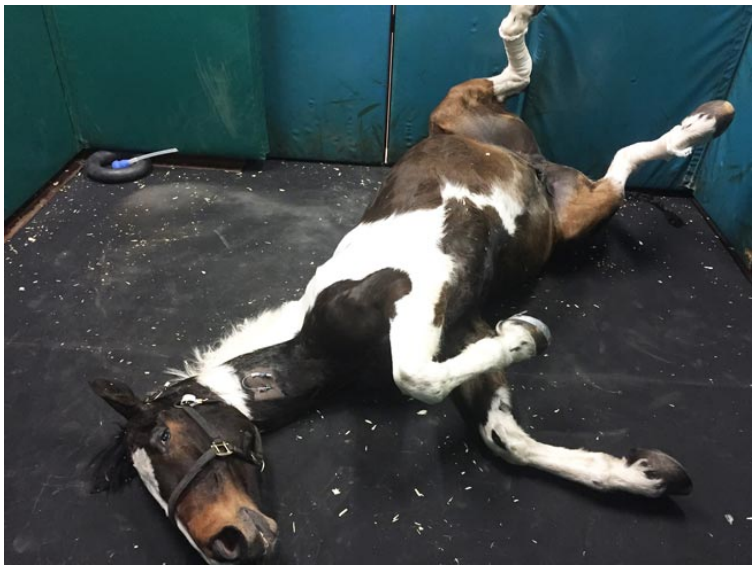
Horses display pain with numerous conditions. It can be acute, severe and easily recognised with colic, but the impact of chronic pain on horses' quality can be overlooked – particularly if it is multifocal with an insidious onset.



The ideal analgesic for equine colic has minimal direct effect on gastrointestinal motility and cardiovascular function, and has short duration and predictable level of analgesia.

The criteria for selection of the most appropriate pain management regimen must take both drugs' efficacy and side effects into account, and optimal choices vary with the clinical presentation.

Colic

Together with clinical findings – such as tachycardia, absence of gastrointestinal sounds, nasogastric reflux and abnormal findings on rectal exam – the degree of pain and response to analgesia are important parameters to consider when evaluating a horse with colic.

The ideal analgesic for equine colic has minimal direct effect on gastrointestinal motility and cardiovascular function, and short duration and predictable level of analgesia. The ideal analgesic does not exist; therefore, it is helpful if each clinician chooses from a relatively limited "menu", so

he or she can judge the response of individual cases against his or her database of personal experience.

Many clinicians prefer to avoid flunixin at first presentation in colic cases – particularly large doses of it. The concern here is, because of its potency, flunixin may “mask surgical colic”. This concern is valid; however, it presupposes that level of pain is the only parameter being used for evaluation.

When coupled with careful clinical evaluation – particularly including rectal exam and testing for nasogastric reflux – moderate doses of flunixin do have a role in field colic management. This is particularly so when a specific diagnosis, such as pelvic flexure impaction, has been made and exploratory surgery is unlikely to be required.

An advantage (and disadvantage) is flunixin has a relatively long duration of action, but this feature is common among NSAIDs.

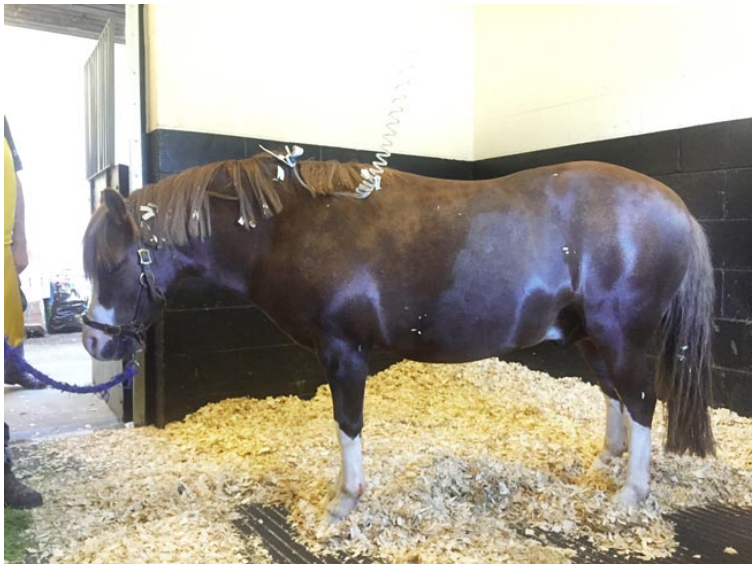
NSAIDs can lead to intestinal mucosal damage and/or impede mucosal recovery following ischaemia. Selective cyclooxygenase-2 (COX-2) inhibitors should, in theory, have less impact on mucosal recovery, but the evidence to support that assertion matters clinically is sparse and conflicting.

Firocoxib – a COX-2 inhibitor – did not retard mucosal recovery in ischaemia-injured intestine, whereas flunixin does. Critically ill horses are also at risk of renal injury – both phenylbutazone and meloxicam have been shown to reduce renal function and we are hampered by a lack of robust, prospective clinical studies looking at efficacy and harms associated with NSAIDs in real-life colic cases.

Hyoscine-N-butylbromide with metamizole remains a popular choice for first-line colic management, while the alpha-2 adrenergic agonists’ sedative effects can be useful in facilitating clinical evaluation of the case. Again, the trick is not to use too much as, ideally, the horse still undergoing assessment should not be so heavily sedated that pain is masked.

Hyoscine and the alpha-2 adrenergic agonists will all, to some extent, reduce gastrointestinal motility. This can be helpful in some cases where increased gastrointestinal motility is present and, provided repeated doses are not given, this is not generally a major complication. However, this side effect should be taken into account where reduced gastrointestinal motility may be counterproductive – for example, in horses with pelvic flexure impaction or sand enteritis.

Chronic lameness



Laminitis requires careful analgesic therapy. Multimodal approaches can be helpful – particularly where NSAIDs' side effects are present.

NSAIDs are also our first port of call in managing chronic musculoskeletal pain. No single drug in this class has been shown to be more efficacious than others in randomised controlled trials. Indeed, in comparison of phenylbutazone versus firocoxib and phenylbutazone versus suxibuzone, alleviation of lameness did not differ between treatment groups. That horses that have been treated with phenylbutazone are excluded from the human food chain can be a relevant consideration.

Suxibuzone is more palatable than phenylbutazone. Phenylbutazone has been linked to pancytopenia and bone marrow suppression, and ulcerative cystitis, but the most major side effect associated with longer-term NSAID use is gastrointestinal ulceration particularly affecting the right dorsal colon and leading to protein-losing enteropathy.

Meloxicam is less harmful to gastric mucosal permeability measured by sucrose permeability than phenylbutazone, but the clinical relevance of this difference is questionable, given the large price difference between the licensed products. Little difference exists between phenylbutazone and suxibuzone in respect to gastrointestinal side effects. Together, they are probably the most commonly used products for managing chronic lameness in horses.

Multimodal analgesia in the field

In cases where NSAIDs are not sufficient, or have to be withdrawn due to complications such as protein-losing enteropathy, it is extremely difficult to manage chronic severe pain. The most common clinical scenario where this occurs is in the chronic laminitic. Alternative approaches to corrective farriery should be considered, such as using rocker shoes or sole supports, but, in combination with this, a multimodal approach to analgesia is appropriate.

Multimodal analgesia – including tackling pain at the CNS level, rather than sticking solely with drugs affecting peripheral sensitisation – is logical. The opiate tramadol can be helpful and, in horses, is given orally up to 10mg/kg twice a day.

Paracetamol has weak inhibitory effects on COX, but its analgesic effect is mediated via the CNS, involving inhibition of prostaglandin synthesis and interactions with both the serotonergic and cannabinoid pathways. This drug has not been extensively studied, but is well absorbed from the equine small intestine when given orally and can be used at a dose of 20mg/kg to 25mg/kg orally twice a day.

Gabapentin – a drug that acts within the spinal tracts and reduces calcium influx and cellular excitability – has been proposed as useful in horses, but, despite some initial enthusiasm, its efficacy for chronic pain management in horses is debatable. It is also worth considering paracetamol.

Conclusion

Equine clinicians use analgesics extremely frequently, but relatively few options are available to choose from. This is perhaps because NSAIDs are so helpful in many cases and, when used appropriately, side effects are relatively uncommon. Nevertheless, a need exists for more prospective clinical studies to help clinicians select the most effective drug to use in common clinical scenarios, such as management of the colicing horse or horses with severe musculoskeletal pain.

- Some drugs mentioned in this article are used under the cascade.