Common Myths in Pain Management

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There are probably a million myths or misunderstandings I encounter as a pain specialist when reading posts on forums or speaking to colleagues. I hope to present some of the common beliefs encountered that will clear up those myths based on clinical studies.

If an animal is pre-medicated with butorphanol, does this mean that using another full mu opioid will be ineffective?

This is debatable, as studies show conflicting results. Traditionally we thought giving an agonist-antagonist would be counterproductive when later giving a full mu opioid. We now know we can get several responses that are likely species, type of pain, age and even sex dependent. We have studies in animals and humans that include no change in analgesic effects when the two are combined, an analgesic reduction when the two are combined and even an improvement when the two are combined. In general, because of the highly variable outcomes of these studies and the "unknowns", it is more practical and ethical to give a full mu opioid rather than risk a painful patient or consider a butorphanol constant rate infusion for animal suffering from visceral pain, such as pancreatitis.

Butorphanol is labeled for mild to moderate pain so we use it for most surgeries.

There are few surgeries I would label as mild to moderately painful as pain perception is highly variable to each individual, just as the surgeons tissue handing technique, which with poor technique has also been associated to more painful recoveries post operatively in humans than expected, is also variable and subjective. We also must question its duration of analgesic effect, as effects are questionable when used alone. Butorphanol has a strong affinity for the mu receptor but does not necessarily activate the receptor, causing analgesia. We have studies that support analgesic effects last less than 60 minutes in some studies and 3-7 hours in others. What is also important to understand is for either study the mu receptor is not fully activated, making butorphanol a poor analgesic for a majority of surgical patients.

If I use butorphanol prior to an epidural of morphine, will be the epidural be ineffective?

Epidural morphine takes 60 minutes for effect. We are also placing the medication directly at the site of action and will outweigh any butorphanol competition. Rather, just don't use butorphanol.

Does the use of ketamine in the premedication of cats or dogs result in any analgesic effects?

Most definitely. Ketamine is now well described in the literature as being a potent NMDA agonist that helps control windup. Ketamine can also be used at microdoses, with subclinical effects to alleviate windup concern and reduce MAC. Ketamine can be used to reduce opioid burden and offer a multimodal approach.

If I don't expect pain during an anesthetic event, is there any reason to pre-medicate the animal?

Yes. The main advantage of premedication is reduction in the dose of induction and maintenance volatile anesthetics or IV CRI of induction agents (TIVA), with expected reduction in negative effects. Premedication will also reduce the total cost of anesthesia.

We must also be careful with what is considered "non-painful". Example: It is often misconstrued that endoscopy may be non-painful or only slightly uncomfortable. However, human reports suggest a heartburn-like pain after lengthy endoscopy procedure, likely due to the operator making repeated paces with the scope and hitting the esophageal wall. However, some opioids may increase sphincter tone (morphine).

Should opioid induced bradycardia be treated?

Yes. Depending on the severity of the bradycardia, and in particular for anesthetized patients, vagal-induced bradycardia (as a result of opioid administration) will have a corrective effect on CO. Depressive inhalant effects may add to the negative effect of low heart rate. Hypovolemic patients will likely not improve from catecholamine correction and volumes should be managed in the typical manner. A heart rate of 80-120 bpm in cats and 60-80 bpm in dogs (related to patient size) is worth treating. Bradycardia is less detrimental in the awake animal following opioid administration.

Should I wait to give pain medications until after a neurologic exam, if my patient is not presenting for a neurological problem or is overtly neurological?

NO! This excuse is long overused. Practitioners likely have an opioid they are familiar with in regards to its effects on animals. These effects should be considered during a neurological exam. A patient in severe pain will also not present as neurotypical.

Is there any benefit to the addition of acepromazine or other sedative to an opioid given as premedication in a patient in pain?

Yes, if the detrimental effects from acepromazine or other sedative are acceptable. Sedation and central nervous system depression can intensify the effect from an analgesic, which may allow you to give less of the analgesic. Anxiety and exhaustion are also large components of the pain experience and alleviating either pharmacologically will better the experience.

Opioids are not safe in critical patients.

Absolutely false. Not using opioids or other effective analgesics in a critical patient is not safe. A reduction in doing may be needed for more critical cases, and if concerns arise they can be reversed. Pain causes a cascade of catecholamine release which can worsen the patient's state.

Buprenorphine has a ceiling effect.

More current receptor theory and human studies show this in not true, rather there is a ceiling effect on respiratory depression

Buprenorphine will compete with other stronger opioids if given at the same time or within the half-life period.

Not so much. More evidence is showing that this partial agonist can play nicely with full mu opioids.

Buprenorphine is not as good as hydromorphone or other "bigger" opioids.

Buprenorphine with appropriate dosing (much higher than typically prescribed doses) can be as potent as hydromorphone. There is even some evidence of an anti-inflammatory component to buprenorphine.

Tramadol works?

In cats, yes. Really well in fact. In dogs, unless you have the IV version, not so much. We have plenty of evidence to support that oral tramadol is likely providing minimal to no analgesia in dogs. While this tends to be a point of contention with some practitioners, the science is in. What is likely interpreted as "pain relief" is likely the SSRI effects tramadol has. This means the animal is essentially happily in pain.

Can opioids act peripherally?

Absolutely. There is evidence that opioid receptors are far more dispersed outside of the supraspinal and spinal area than previously thought. This is why the addition of opioids to local block solutions can dramatically prolong the duration.

Is Maropitant (Cerenia) a pain medication?

Maropitant does have some MAC sparing effects but should not be used as a first line pain medication at this time. As further research looks at its potential anti-nociceptive properties, we may be looking at different dosing for these continued effects.

REFERENCES AVAILABLE UPON REQUEST