Butorphanol vs Buprenorphine as an Adjunct Intramuscular Sedative in Cats

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In the Literature

Bhalla RJ, Trimble TA, Leece EA, Vettorato E. Comparison of intramuscular butorphanol and buprenorphine combined with dexmedetomidine for sedation in cats. *J Feline Med Surg.* 2018;20(4):325-331.

FROM THE PAGE ...

Intramuscular sedation can help facilitate intravenous catheter placement. Insufficient sedation may not only preclude intravenous catheterization but can also increase patient stress, particularly in patients resistant to restraint, and adverse effects with sedation (eg, cardiovascular disturbances, respiratory depression, GI effects, excitement) may also be seen.

Opioids are often used as adjuncts to other sedatives for an enhanced calming effect with fewer cardiovascular consequences. Opioids exert effects at 3 different receptor types (ie, μ, κ, Δ) located throughout the body, including, but not limited to, the brain, spinal cord, GI tract, and chemoreceptor trigger zone.[1] Consequently, opioids are associated with a variety of effects (eg, analgesia, sedation, dysphoria, nausea, decreased GI motility), which vary by drug and recipient species. Buprenorphine is considered to be a partial μ agonist, whereas butorphanol is classified as a μ antagonist and κ agonist. Buprenorphine has been shown to produce superior analgesic effects as compared with butorphanol[2,3] and is associated with fewer GI side effects than are full μ agonists, although nausea and vomiting may still occur. In contrast, butorphanol has been found to have antiemetic properties in certain species.[1] Opioids and α_2-adrenergic agonists have synergistic effects when used in combination in cats.

This prospective study investigated differences in sedation achieved with intramuscular dexmedetomidine (10 μg/kg) combined with butorphanol (0.4 mg/kg) as compared with intramuscular dexmedetomidine (10 μg/kg) combined with buprenorphine (20 μg/kg) for intravenous catheter placement. Forty healthy adult cats being sedated for minimally invasive procedures were included. An earlier study comparing these protocols in dogs found superior sedation with butorphanol, and the addition of butorphanol has previously been shown to provide superior sedation in cats when compared with dexmedetomidine alone.[4,5]

Cats were scored on their sedation, and an attempt was made to place an intravenous catheter, with additional sedation with alfaxalone administered as necessary. Undesirable effects were also recorded. Although only a small number of cats in both groups required additional sedation with alfaxalone, those that received butorphanol had significantly higher sedation scores than those that received buprenorphine. In addition, a significantly greater number of cats vomited after receiving buprenorphine. It was concluded that butorphanol in combination with dexmedetomidine provides superior sedation with fewer adverse effects as compared with buprenorphine.

… TO YOUR PATIENTS

Key pearls to put into practice:

1 Intramuscular sedation with butorphanol in combination with dexmedetomidine is likely to provide superior sedation in cats than buprenorphine and dexmedetomidine.

2 Butorphanol is less likely than is buprenorphine to contribute to emesis when used in combination with dexmedetomidine for intramuscular sedation.

3 In cats for which buprenorphine is a more desirable choice of opioid (eg, painful patients or those undergoing invasive procedures), administration of an antiemetic 45 to 60 minutes prior to intramuscular sedation may be considered.

References

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