Intranasal Naloxone Administration in Dogs

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In the Literature

Wahler BM, Lerche P, Pereira CHR, et al. Pharmacokinetics and pharmacodynamics of intranasal and intravenous naloxone hydrochloride administration in healthy dogs. *Am J Vet Res*. 2019;80(7):696-701.

FROM THE PAGE ...

The growing crisis of the abuse of illicit and prescription opioids in humans has led to accidental exposures in pets and working dogs.[1-4] In humans, a commercial intranasal naloxone hydrochloride atomizer is available to treat opioid overdoses and may be purchased without a prescription.[5] There is a growing interest in the use of such atomizers in veterinary patients, particularly for emergency stabilization prior to transporting a patient to a veterinary facility for care.[3,4]

This study compared IV naloxone with intranasal naloxone delivered by a commercially available atomizer in healthy dogs. Time to reach peak plasma levels, maximum concentration, and naloxone half-life were measured and calculated. The intranasal route rapidly achieved clinically useful plasma levels in healthy medium-sized dogs. Naloxone was detectable in plasma 2.3 ± 1.4 minutes after intranasal administration; mean time to maximum concentration in plasma was 22.5 ± 8.2 minutes. Naloxone half-life was similar for both routes of administration (IV, 37 ± 6.7 minutes; intranasal, 47.4 ± 6.7 minutes). It is unclear if nasal conformation (eg, brachycephaly, dolichocephaly) affects intranasal absorption.

Reported adverse effects of naloxone include excitability, vomiting, and tachycardia; however, there were no notable changes in behavior, heart rate, or respiratory rate following naloxone administration by either route in this study.

... TO YOUR PATIENTS

Key pearls to put into practice:

1. Naloxone has a shorter half-life as compared with many opiates.[5-8] Therefore, it should be stressed to pet owners that, in the event of an accidental opioid overdose, veterinary attention should be sought immediately even if naloxone has been administered and the pet has responded well, as the pet will likely require further care.
2. The commercially available naloxone atomizer delivers a single 4-mg dose. The relative body size will likely affect the dose achieved in plasma. Smaller dogs should theoretically achieve higher plasma levels, whereas large- or giant-breed dogs may achieve lower plasma levels.

References

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