

**FOCUS** Presurgical Antiemetic?

Full mu-agonists are used to treat moderate to severe pain and yield dose-dependent sedation and analgesia. Potential adverse effects include respiratory depression, bradycardia, behavioral changes, urine retention, and GI effects (eg, salivation, nausea, vomiting, defecation). The specific drug, its lipid solubility profile, dose and route of administration, and concomitant drug administration affect vomiting. Decreased incidence is noted with higher opioid doses, higher lipid solubility, and prior administration of acepromazine. Maropitant (cerenia.pfizer.com), a neurokinin-1 receptor (NK1) antagonist approved for prevention and treatment of vomiting in dogs, has been shown effective in preventing vomiting secondary to various emetic stimuli. A randomized, blinded, prospective study evaluated maropitant's effectiveness in preventing vomiting after

hydromorphone premedication. Eighteen dogs admitted for elective orthopedic surgical procedures were included. Dogs received 1 of 2 treatments: 1.0 mg/kg (0.1 mL/kg) maropitant or 0.1 mL/kg saline SC administered 1 hour before premedication with 0.1 mg/kg hydromorphone IM. Each dog's emetic events and nausea signs (ie, salivation, increased frequency of or exaggerated swallowing motions, licking lips) were documented for 30 minutes after premedication. Dogs receiving maropitant had significantly fewer incidences of vomiting; vomiting and retching; and vomiting, retching, and nausea when compared with saline.

**■ Commentary**

Opioids are frequently used preoperatively for their calming and analgesic properties. Opioids, especially mu-agonists (eg,

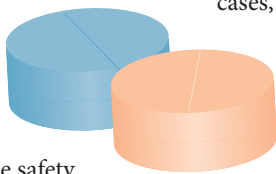
hydromorphone), have inherent degrees of adverse effects. Documented problems of mu-agonist opioids include bradycardia, vomiting, histamine release, panting, and hyperthermia. In certain instances, specific effects cannot be tolerated (eg, vomiting patients with increased intracranial and/or intraocular pressures). Based on this study, maropitant administered 1 hour before hydromorphone is a feasible option to help curb nausea, retching, and vomiting in healthy dogs.—*Andrew Claude, DVM, DACVAA*

**■ ■ Source**

Efficacy of maropitant in preventing vomiting in dogs premedicated with hydromorphone. Hay Kraus BL. *VET ANAESTH ANALG* 40:28-34, 2013.

**Too Much of a Good Thing**

Pimobendan, approved for treating canine congestive heart failure, has a dose range of 0.2–0.6 mg/kg PO q12h and apparently wide safety margin. However, because of the chewable tablet flavor, accidental ingestion and overdosing occurs. Seven dogs with suspected pimobendan toxicosis were evaluated via records from an animal poison control database. A toxic dose was defined either as suspected ingestion  $\geq 0.6$  mg/kg q12h if signs were present, or  $> 2$  mg/kg regardless of whether signs were present. Signs were seen in 5 dogs and included severe tachycardia ( $n = 4$ ), mild hypotension ( $n = 2$ ), hypertension ( $n = 2$ ), and new transient heart murmur ( $n = 1$ ). Two dogs showed no signs. Decontamination via emesis and activated charcoal was performed in all



cases, followed by hospitalization for monitoring and supportive care. Outcomes were uniformly good; all dogs survived to discharge within 24 hours of suspected exposure.

One dog died 3 days after presumptive pimobendan overdose, possibly from preexisting cardiac disease. The uncertain amount and time of pimobendan ingestion were major limitations. The authors concluded that pimobendan toxicosis in healthy dogs is fairly benign, although care should be taken in cases of preexisting cardiovascular disease.

**■ Commentary**

Pimobendan is increasingly used in veterinary medicine. Both hyper- and hypotension were reported in the accidental overdoses; whether this is related to the underlying disease and the body's com-

pensation mechanisms is unknown. Dogs with underlying cardiac disease can be more difficult to manage than healthy dogs; fluids, colloids, and other cardiac medications must be used with caution in these patients. This is also a good reminder that chewable medications can be a double-edged sword—they enhance pill administration but may encourage ingestion, leading to overdose.—*Tina Wismer, DVM, DABVT, DABT*

**■ ■ Source**

Clinical signs of cardiovascular effects secondary to suspected pimobendan toxicosis in five dogs. Reinker LN, Lee JA, Hovda LR, Rishniw M. *JAAHA* 48:250-255, 2012.

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