Alphaxalone is a synthetic neuroactive steroid that interacts with gamma-aminobutyric acid (GABAA) receptors to produce anesthesia and muscular relaxation. This injection causes no perivascular damage, and alphaxalone's cardiovascular and respiratory effects are minimal when administered slowly. Alphaxalone in a mixture of hydroxypropyl beta cyclodextrin (HPCD) does not have any cumulative effect, undergoes fast biotransformation, and can be used as a constant rate infusion (CRI). Etomidate, an imidazolic short-acting anesthetic with minimal respiratory and cardiovascular effects, is preferred for inducing anesthesia in dogs with cardiomyopathy, hypovolemia, cirrhosis, or intracranial hypertension but is not as safe as a CRI. Adverse reactions (eg, excitement, myoclonus, vomiting) have occurred during induction and in recovery.

Cardiorespiratory effects, quality of induction, and recovery following IV administration of etomidate or alphaxalone in a HPCD mixture were compared. Significant tachycardia, increase in cardiac index, and statistically (not clinically) significant decreases in arterial pressures and systemic vascular resistance index (SVRI) were noted with the alphaxalone–HPCD mixture. No statistically significant cardiovascular changes were observed with etomidate. Extubation time was longer with the alphaxalone–HPCD mixture (25 ± 7 minutes) than with etomidate (17 ± 4 minutes). Induction quality was the same, but recovery quality was significantly better using alphaxalone–HPCD. Both drugs caused short-lived hypoxia; preoxygenation is advisable. Both appear suitable for compromised dogs. When tachycardia may be detrimental, alfaxalone may not be ideal or may require slower administration.

**Commentary**

Etomidate reportedly has no cardiovascular effects but has unique adverse events, including an respiratory, an alternative unavailable in the United States, is known for minimal adverse effects (including cardiovascular). Etomidate and alphaxalone (and most induction agents) can cause respiratory depression. Oxygen supplementation is advised before and after anesthetic induction. Preoxygenation is advisable. Time to desaturation in dogs induced with propofol and sedated with acepromazine and morphine. ¹ We perform 3 minutes of preoxygenation with 100% oxygen via facemask for all patients before induction to prevent possible hypoxemia caused by respiratory events from the induction agent. — Anderson Favaro da Cunha, DVM, MS, DACVA

**Source**
