REPTILE ANESTHESIA AND ANALGESIA

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Reptile anesthesia and analgesia is a daunting and unfamiliar area for many veterinarians. The most numerous species are lizards and snakes, but tortoises and turtles are commonly encountered.

As ectotherms reptiles use external temperatures to behaviorally thermoregulate. Although warmth is important, it is easier to kill reptiles at high than low temperatures. Ill and chemically immobilized reptiles are unable to remove themselves from hot surfaces; burns may occur if the animals are left in contact with a hot surface. It is usual to allow reptiles to acclimate to room temperatures or higher during the peri-anesthetic period. Hypothermia alone is not considered humane or appropriate for restraint of reptiles. Hypothermia depresses metabolism, impairs immune and gastrointestinal function and is unlikely analgesic. Reptiles are usually fasted in the perianesthetic period.

The renal portal system has little to no effect on drug absorption and usage. Cardiac shunting, particular in aquatic or diving reptiles, can have a marked effect on inhalant anesthetic uptake and excretion. This effect appears to be ameliorated by epinephrine administration resulting subjectively in more rapid recovery. Tortoises and turtles can be ventilated by moving their legs in and out. The glottis of reptiles is closed unless they are actively inhaling or exhaling.

Ketamine alone is associated with prolonged recoveries. A multimodal approach to anesthesia is, therefore recommended. Although also associated with prolonged recoveries, a combination of tiletamine and zolazepam (Telazol) is recommended for immobilization of large dangerous reptiles (i.e. large constrictors, lizards and crocodilians). Propofol can be used when vascular access is available. The newly available alfaxalone does not provide any advantages over propofol. Sevoflurane provides a more rapid recovery than isoflurane, but is more costly. Some of the differences in recovery time can be reduced by aggressive vaporizer management. Analgesics in reptiles include opioids, NSAIDs and tramadol.
Vascular access sites include the external jugular, subcarapacial, palatine, coccygeal and ventral abdominal veins. Additionally, intraosseous catheters can be used in lizards. The heart can also be used with care.

Snake anesthesia, as with other reptile groups, is usually based around an inhalant anesthetic. Induction can be either by intubation and inhalant anesthetic administration or by using parenteral anesthetic combinations. Intubation is usually simple. Venomous snake anesthesia is not recommended for the experienced, but also based around inhalant anesthesia. Lizards may be induced with propofol, inhalant anesthesia, or parenteral drug combinations. Iguanas and some other lizards can be temporarily immobilized with pressure on the globes (vagal response?). Turtle and tortoise anesthesia also relies on either propofol or multimodal drug administration for induction.