COMPARISON OF ANAESTHETHIC EFFECT OF KETAMINE-MEDETOMIDINE, KETAMINE-MEDETOMIDINE-MORPHINE AND KETAMINE-MEDETOMIDINE-TRAMADOL IN RED-EARED SLIDERS (*TRACHEMYS SCRIPTA ELEGANS*)

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Abstract

Anaesthesia in chelonian species has always been a challenge for most veterinarians due to slow metabolism of anaesthetic drugs and difficulty in obtaining vascular access. Combination of ketamine-medetomidine can be administered intramuscularly and the effect can be antagonized with atipamezole. Morphine and tramadol in chelonians was found to provide antinociceptive effect, but with profound respiratory depression. Therefore, the objective of this study was to evaluate anaesthetic effects of ketamine-medetomidine (KM), ketamine-medetomidine-morphine (KMM) and ketamine-medetomidine-tramadol (KMT) in the red-eared sliders (*Trachemys scripta elegans*). Six red-eared sliders were randomly divided into three groups. Using a 3X3 Latin square crossover design, each group of animals was subjected to all the three treatment protocols that were KM, KMM, and KMT, with two weeks wash-out period in between each of the treatment protocol. Anaesthesia parameters such as heart rate, palpebral reflex, muscle relaxation, jaw tone and ease of intubation were accessed for 60 minutes. Blood was sampled via the subcarapacial sinus for pre- and post-anaesthesia complete blood count and serum biochemical analyses. All the three treatment protocols rendered the turtles to reach a level of anaesthesia that was sufficient for endotracheal intubation procedure. There were no significant differences in heart rate, muscle relaxation and palpebral reflex score for the three treatment protocols. Treatment with KMM resulted in significantly prolonged return of spontaneous breathing after reversal with atipamezole ($p<0.05$) as compared to KM and KMT. Treatment with KMM also resulted in prolonged recovery while KMT showed incidences of renarcotization. In conclusion, KM is the drug combination of choice to induce general anaesthesia in chelonians. For invasive procedures, opioid in combination with KM may be considered with close monitoring of post-anaesthesia.

Keyword: ketamine-medetomidine, morphine, tramadol, red-eared sliders