

Ketamine-Medetomidine Protocol for Chemical Restraint of Wild Roe Deer (*Capreolus capreolus*)

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This study aimed to evaluate a ketamine-medetomidine protocol for chemical restraint of wild roe deer (*Capreolus capreolus*) rescued and transported to a wildlife rehabilitation centre.

Thirteen roe deer (12 males, 1 female; body weight 21 [20 – 24] kg) received IM ketamine (1.5 mg kg⁻¹) and medetomidine (30 µg kg⁻¹), administered via blowpipe or direct injection, depending on the circumstances. For all subjects, induction time (time to immobilisation) was recorded and key physiological variables (HR, f_R , and SpO₂) were monitored every 5 minutes. Euthanasia was performed when rehabilitation was deemed unfeasible. For the remaining individuals, atipamezole (0.15 mg kg⁻¹, administered half IV and half IM) was used as a reversal agent, and time to standing was recorded. The quality of induction, immobilisation, and recovery was assessed using a five-point scale (1 = poor, 5 = excellent) (Avni-Magen et al. 2019). Physiological variables at different time points were analyzed within the group using the Friedman test, with significance set at $p < 0.05$.

Results are reported as median (range). The induction time was 5 (4 – 7) minutes. The HR was 67 (55 – 77) beats minute⁻¹, f_R was 28 (24 – 36) breaths minute⁻¹, and SpO₂ was 93 (92 – 96) %. Euthanasia was required in six cases. Atipamezole was administered 72 (45 – 109) minutes post-induction, with animals standing in 2 (2 – 4) minutes. Scores for induction, immobilisation, and recovery were 5 (4 – 5), 4 (4 – 4), and 4 (3 – 5), respectively. No anaesthetic-related complications were observed. The Friedman test did not reveal significant p values.

Roe deer frequently sustain severe injuries, necessitating chemical restraint for safe transport to wildlife centres and to mitigate the risk of capture myopathy (Varga 2016, Pacini et al. 2022). This protocol ensured effective restraint, and its partial reversibility enables prompt recovery and release, making it suitable for field applications.

References

- Varga M. (2016) Deer. In: BSAVA Manual of Wildlife Casualties (2nd edn). Mullineaux E, Keeble E (eds). BSAVA, UK. pp. 275-298.
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