1). Neuroleptanalgesia in wild Asian elephants (*Elephas maximus maximus*)

1. Ashoka Dangolla BVSc, PhD,
2. Indira Silva BVSc, PhD,
3. Vijitha Y Kuruwita BVSc, PhD

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Abstract

Objective To evaluate the suitability of etorphine with acepromazine for producing prolonged neuroleptanalgesia in wild Asian elephants.

Animals Ten adult wild elephants (four males, six females), free-roaming in the jungles of the north-western province of Sri Lanka.

Materials and methods Ten wild elephants were tranquilized for attachment of radio transmitter collars from September to November 1997, using Large-Animal Immobilon (C-Vet Veterinary Products, Leyland, UK), which is a combination of etorphine (2.45 mg mL^{-1}) and acepromazine (10 mg mL^{-1}). This was injected using projectile syringes fired from a Cap-Chur gun (Palmer Chemical Co. Inc., Atlanta, USA). A volume of 3.3 (2.5–4.5) mL Immobilon (6.12–11.02 mg of etorphine and 25–45 mg acepromazine) was injected intramuscularly after body mass estimation of individual elephants.

Results The body condition of all darted elephants was good, and the mean (minimum–maximum) shoulder height was 225 (180–310) cm. The average approximate distance to elephants at firing was 26 (15–50) m. The average time to recumbency after injection was 18 (15–45) minutes. Nine out of 10 elephants remained in lateral recumbency (and did not require additional dosing) for a period of 42 (28–61) minutes. The respiratory and heart rates during anaesthesia were 7 (4–10) breaths and 52 (40–60) beats $minute^{-1}$, respectively. An equal volume (8.15–14.67 mg) of diprenorphine hydrochloride (Revivon, 3.26 mg mL^{-1} diprenorphine; C-Veterinary Products, Leyland, UK) was given intravenously when the procedure was completed. Recovery (return to standing position) occurred in 6 (2–12) minutes after diprenorphine injection. Immediately afterwards, all elephants slowly retreated into the jungle without complications. Continuous radio tracking of the animals involved in this study indicated no post-operative mortality for several months after restraint.

Conclusions/clinical relevance Etorphine–acepromazine combinations can be used safely in healthy wild Asian elephants for periods of restraint lasting up to 1 hour.