

## RESULTS OF THE 2012-2013 MEGAVERTEBRATE ANALGESIA SURVEY: ELEPHANTS AND RHINOCEROS

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### Abstract

Megavertebrate analgesic choices are based largely on anecdotal information. To examine current practices, an online survey utilizing the AAZV listserv was conducted from September 2012 through March 2013. Compiled data included; signalment, drugs administered, dosing regimens, efficacy (subjectively scored), ease of administration, and adverse events.

Thirty-eight facilities exhibited Asian (*Elephas maximus*) or African (*Loxodonta africana*) elephants and 33 exhibited White (*Ceratotherium simum spp.*), Black (*Diceros bicornis spp.*), or Indian (*Rhinoceros unicornis*) rhinos. Non-steroidal anti-inflammatories were administered to elephants and rhinos at all facilities. Phenylbutazone (0.25 - 10 mg/kg) and flunixin meglumine (0.2 - 4 mg/kg) were administered most commonly, followed by ibuprofen (0.8 - 8.5 mg/kg, to elephants only). Good to excellent efficacy was reported for ibuprofen. In elephants, six adverse events (gastrointestinal bloat or colic) were reported (30% associated with carprofen). In rhinos, adverse events were mild gastric ulceration and taste aversion.

Opioid drugs were administered to elephants at nine facilities and to rhinos at six facilities. Tramadol (0.5 - 2 mg/kg) was used most commonly, followed by butorphanol (0.05-0.2 mg/kg). Tramadol efficacy scores were highly variable in both elephants and rhinos. Butorphanol had good efficacy. Adverse events included drowsiness and decreased fecal production.

Other modes of analgesia included; glucosamine/chondroitin sulfate, gabapentin, corticosteroids, local anesthetics, low level laser therapy, alpha-2-adrenergic agonists, and omega 3/6 fatty acids.

This survey showed drug choices were similar among institutions, but significant variability in dosing regimens and efficacy exist. Further research to improve analgesia for these species is warranted.