

Meloxicam Use in African Grey Parrots

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In the Literature

Montesinos A, Encinas T, Ardiaca M, Gilabert JA, Bonvehí C, Orós J. Pharmacokinetics of meloxicam during multiple oral or intramuscular dose administration to African grey parrots (*Psittacus erithacus*). *Am J Vet Res*. 2019;80(2):201-207.

FROM THE PAGE ...

Meloxicam is a commonly used NSAID in avian and exotic animal medicine due to its cyclooxygenase-2 specificity and ease of administration. This study sought to build on previous research by the same authors that examined the pharmacokinetics of a single dose (IV, IM, or PO) of meloxicam in 6 healthy African grey parrots. The current study examined plasma meloxicam concentrations following intramuscular or oral once-daily administration for 7 to 12 days. The effects of administering meloxicam at 1.6 mg/kg PO q24h for 7 days were also examined. Neither efficacy nor pharmacodynamics were evaluated.

At the recommended dose of 1 mg/kg IM or PO q24h, plasma meloxicam concentrations were above those determined to be therapeutic in Amazon parrots at all time points. Plasma meloxicam concentrations increased the first few days following initiation of administration, indicating an accumulation in plasma. Plasma concentrations were steady at the 24-hour sample time points approximately 2 to 4 days after the first dose.

Similar to the lower dose previously described, when meloxicam was administered at 1.6 mg/kg PO, plasma concentrations were maintained above therapeutic concentrations at all time points. Evidence (ie, elevation of *N*-acetyl- β -D-glucosaminidase in plasma and urine) suggests this meloxicam dose may lead to kidney cell necrosis; however, no changes were noted on serum chemistry profiles and all birds remained clinically normal. *N*-acetyl- β -D-glucosaminidase concentrations were not evaluated following administration of the recommended dose of 1 mg/kg. Meloxicam accumula-

tion was also observed at this higher dose, but a steady concentration was not reached by 7 days after the first dose.

Although the authors' intent was to determine the pharmacokinetics of meloxicam in African grey parrots during administration of multiple doses, blood samples were only collected at 12 and 24 hours after drug administration; thus, no pharmacokinetic parameters (eg, maximum concentration, time of maximum concentration, half-life) could be determined, making comparisons of the pharmacokinetics of single- and multiple-dose regimens difficult. However, there is evidence that repeated dosing of meloxicam may lead to therapeutic concentrations for considerable periods of time and that there is an accumulation of the drug in the plasma. As such, the dose may need to be decreased to reduce the risk for adverse effects.

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** In African grey parrots, repeated administration of meloxicam at 1 mg/kg IM or PO q24h maintains plasma concentrations well above those associated with analgesia in other parrot species.
- 2** Accumulation of meloxicam in the plasma occurs with repeated administration, and steady state occurs approximately 2 to 4 days after initiation of 1 mg/kg PO or IM q24h administration.
- 3** When meloxicam is administered at a higher-than-recommended dose, kidney cell necrosis may occur.