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Pharmacokinetics and dosage regimen of ciprofloxacin following single intramuscular administration in *nili/ravi* buffalos

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Ciprofloxacin is second generation fluoroquinolone antibiotic which is being used to treat various infectious diseases of man and animals. Due to wide-spread use of this antimicrobial in veterinary clinics, but little information regarding its disposition, this project was carried out to determine the PK and optimal dosage regimen of ciprofloxacin in *Nili/Ravi* buffalos. Eight healthy adult buffalos of *Nili/Ravi* breed (average ± SE weight of 368 ± 44 kg) were maintained under same conditions of environment and management. A dose of 5 mg/Kg was administered in the neck muscles of each animal through injection. After injecting drug, samples of blood were taken at various times and kept in centrifuge tubes having heparin. In every animal, a control sample of blood was drawn before injecting drug.

HPLC was used to determine drug concentration in the samples. The value for half-life elimination (t1/2 ß) was 3.05 ± 0.20 hours. Mean ± SE value for volume of distribution (Vd) was 1.09 ± 0.06 L/kg, for AUC was 20.28 ± 1.13 µg.hr/ml and for total body clearance (CL) was 0.25 ± 0.02 L/hr/kg. An optimal dosage regimen for intramuscular administration of ciprofloxacin in *Nili/Ravi* buffalos was calculated using these parameters which were 17.86 mg/kg, recommended to be given after every 24 hours. We came to conclusion that our calculated dose in local buffalos was significantly higher than the recommended dose of manufacturer and to avoid antimicrobial resistance, this locally investigated dosage regimen should be strictly followed in local buffalos.

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