

PHARMACOKINETICS OF CEFQUINOME AFTER SINGLE INTRAMUSCULAR ADMINISTRATION IN DROMEDARY CAMEL (*Camelus dromedarius*)

Lakshmi Kant¹, Amita Ranjan¹, Rakesh Ranjan², VK Dumka³ and Rajdeep Kaur³

¹Department of Veterinary Pharmacology and Toxicology, College of Veterinary and Animal Science, Rajasthan University of Veterinary and Animal Sciences, Bikaner 334001, Rajasthan, India

²ICAR-National Research Centre on Camel, Jorbeer, Bikaner 334001, Rajasthan, India

³Department of Veterinary Pharmacology and Toxicology, College of Veterinary and Animal Sciences, Guru Angad Dev Veterinary and Animal Sciences, Ludhiana 141004, Punjab, India

ABSTRACT

The objective of this study was to investigate the pharmacokinetics of cefquinome in 5 healthy male dromedary camels following a single intramuscular (IM) administration at the dose rate of 1 mg/kg body weight in the caudal cervical epiaxial muscles. Blood samples were collected prior to drug administration and up to 48 h after drug administration. No clinical symptoms or signs suggestive of adverse drug reaction could be recorded in any animal. Plasma cefquinome concentration was estimated by high-performance liquid chromatography. The disposition kinetics of cefquinome best fitted to a 2 compartment open model. The peak plasma cefquinome concentration ($C_{\max \text{ cal}}$) of $1.013 \pm 0.038 \mu\text{g/ml}^{-1}$ was achieved at $5.257 \pm 0.067 \text{ h}$ ($t_{\max \text{ cal}}$). The absorption half-life ($t_{1/2\text{ka}}$), elimination half-life ($t_{1/2\text{p}}$), area under plasma drug concentration-time curve (AUC) and apparent volume of distribution ($V_{\text{d area}}$) of cefquinome were $3.401 \pm 0.042 \text{ h}$, $3.754 \pm 0.072 \text{ h}$, $14.417 \pm 0.621 \mu\text{g/ml}^{-1} \text{ h}$ and $0.379 \pm 0.016 \text{ l/kg}^{-1}$, respectively. The results of the present study suggested that an intramuscular dosage regimen of 1 mg/kg body weight at 24 h interval would maintain the plasma drug levels required to be effective against the common bacterial pathogens in dromedary camel.

Key words: Camel, Cefquinome, Intramuscular, Pharmacokinetics