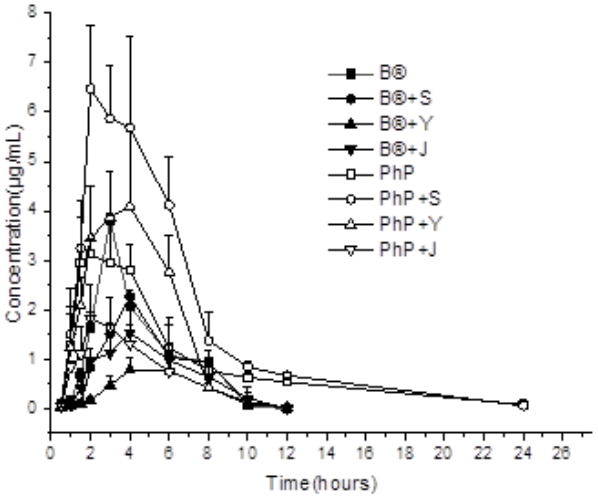
Comparative bioavailability of Enrofloxacin in dogs when concealed in non-commercial morsels, either as tablet or as Enrofloxacin-Alginate preparation

Gutierrez O.L. Departments of Physiology and Pharmacology, School of Veterinary Medicine, National Autonomous University of Mexico (UNAM), Mexico City 04510, Mexico

Sumano L.H. Departments of Physiology and Pharmacology, School of Veterinary Medicine, National Autonomous University of Mexico (UNAM), Mexico City 04510, Mexico

Abstract

It has been postulated that to obtain optimal clinical efficacy with enrofloxacin, the appropriate pharmacokinetics / pharmacodynamics (PK/PD) ratios must be achieved i.e., that the maximum serum concentration (CMAX) reach a peak at or above 10 to 12 times the value of the minimum inhibitory concentration (MIC) (CMAX ≥ 10–12 MIC), and/or the ratio of the area under the concentration vs. time curve (AUC0–24) divided by MIC should be equivalent or higher than 125 (AUC0–24/MIC ≥ 125). Moreover, it has been postulated that if CMAX/MIC values ≥ 16 are achieved, mutant inhibitor concentration can be expected. Enrofloxacin tablets are indicated once a day and they should be administered without food. Yet, pet-owners often fail to comply with this indication and often hide the tablet in a treat or morsel i.e., within a piece of sausage (S), or covered with jelly (J) or with yogurt (Y) to avoid the drug's unpleasant flavor. There is a lack of formal PK data published when enrofloxacin tablet is administered with a morsel. This study presents a pharmaceutical preparation (PhP) based on coating enrofloxacin with alginate derivatives in a very efficient chemical procedure (>then 98%) that eliminates completely the unpleasent flavor of this drug and allows precise and easy dosing, as it can be easily concealed in a sausage. The figure below shows the serum-pharmacokinetic profiles of the original preparation (B®) and the PhP, administered with the 3 types of morsels (S, J or Y). The highest bioavailability (Fr) was achieved by PhP + S (307%). It is concluded that B® decreases its bioavailability when administered with morsels, even up to 70%, while PhP increases Fr, particularly when administered with sausage or yogurt morsels. This maneuver will facilitate dosing by pet owners and will improving compliance with prescription.



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Dr. Lilia Gutierrrez is a Veterinary Surgeon from the National Autonomous University of México (UNAM). She got her Masters and PhD degrees also at UNAM. To date she works as a researcher and lecturer in Veterinary Pharmacology at UNAM. She has published 120 indexed research articles on Veterinary Pharmacology. Her lines of research, for more than 25 years, have always been linked to Veterinary Pharmacology. Particularly on pharmacokinetics and on the analyzis of the correct use of drug preparations, seeking to cover appropriate standards of higher efficacy, safety and animal-welfare. She has various patents on drug-design for both, small species and production species.
Email: liliago@unam.mx