Penobarbitone and feeding in dogs

At steady state AUC_{0-24} is adequate to describe the extent of absorption. AUC over a dose interval at steady state is usually equivalent to AUC after a single dose extrapolated to infinity. The only reason it is not so in this case is that enzyme induction occurs with phenobarbitone.

Although the mean curves in our paper (JSAVA 59: 86-89) appear to indicate a flatter terminal slope after feeding, elimination rate constants were not significantly different on Days 22 and 24 (paired t-test $p = 0{,}56$, median K_E for Day 22 was 0,025 h^{-1} and for Day 24 was 0,024 h^{-1}). It is most unlikely that absorption could be slowed to such an extent that it would affect 8-24 h samples. The mean, standard deviation, and range of gastric emptying time, small intestinal transit time, and small intestinal emptying time of normal dogs is $76 \pm 16{,}7$ (30-120), $73 \pm 16{,}4$ (30-120), and $214 \pm 25{,}1$ (180-300) min respectively[1].

Since phenobarbitone in the therapeutic range obeys linear elimination kinetics, a 10% dose compensation and thus 10% accumulation would be expected to increase serum concentrations by 4 to 11 μmol ℓ^{-1} (therapeutic range 40-110 μmol ℓ^{-1}). This is most unlikely to lead to toxicity of clinical significance.

We acknowledge the typographical error on page 88 and thank Dr. Watson for bringing this to our attention.

1. Miyabayashi T, Morgan J P, Atilola M A O, Muhumuza L 1986 Small intestinal emptying time in normal Beagle dogs. A contrast radiographic study. Veterinary Radiology 27: 164-168.

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