Phenylbutazone and Flunixin Meglumine Used Singly or in Combination in Experimental Lameness in Horses

Jonathan H. Foreman, DVM, MS, Diplomate ACVIM*; and Rebecca Ruemmler, DVM

Data do not support the hypothesis of the phenylbutazone and flunixin meglumine combination as being more efficacious than either drug alone at these dosages in this model of acute foot pain.

1. Introduction
The objective of this study was to test the hypothesis that the combined use of phenylbutazone (PBZ) and flunixin meglumine (FM) would prove more efficacious in alleviating lameness than would either drug alone in an adjustable heart bar shoe model of equine foot pain.

2. Materials and Methods
Eight healthy adult Thoroughbred horses randomly underwent 4 weekly intravenous treatments 1 hour after lameness induction: Saline placebo (1 mL/45 kg body weight), PBZ (4.4 mg/kg), FM (1.1 mg/kg), or PBZ/FM (at the same dosages) were used. Heart rate and lameness score responses were assessed in a blinded manner every 20 minutes for 5 hours after lameness induction and then hourly through 12 hours. Jugular venous samples were obtained at −1, 0, 0:05, 1, 2, 4, 6, 8, 10, and 12 hours and were analyzed for drug concentrations. Repeated-measures ANOVA and post hoc Tukey test were used to identify analgesic effects at a significance level of \( p < 0.05 \).

3. Results
Heart rate was lower in all NSAID-treated trials from 2 hours through 10 hours after treatment. Analgesic effects of FM and PBZ+FM on heart rate lasted through 12 hours after treatment. Lameness score decreased earlier in PBZ and PBZ+FM trials than in FM trials, and analgesic effect on lameness score lasted through 12 hours after treatment for all NSAID-treated trials.