

Evaluation of Retreatment and Case Fatality Rates for Calves Treated with Antimicrobials and Ancillary Flunixin Meglumine for BRD Complex

E. D. Linsenmeyer, BS; D. U. Thomson, MS, PhD, DVM; J. T. Fox, MS, PhD; N. N. Lindberg, DVM
Kansas State University, College of Veterinary Medicine, Manhattan, KS 66506

Introduction

Calves in a feed yard setting are commonly treated for respiratory disease (BRD). Often there are ancillary drugs used in addition to a primary antimicrobial. One of the ancillary treatments used is flunixin meglumine. Flunixin meglumine is labeled as a non-steroidal anti-inflammatory drug with antipyretic activity. Calves treated with flunixin meglumine show decreased body temperature in 24 hours. There is little data showing the effects of ancillary use on retreatment and case fatality rates. The objective of this trial was to evaluate repull rates and case fatality rates on BRD complex treated with or without ancillary flunixin meglumine.

Materials and Methods

Initially, cattle (N=570) were enrolled into the trial when they were first pulled for respiratory disease. Data from these cattle were screened for any errors made during enrollment, and cattle not meeting enrollment criteria were excluded from analysis. Analysis was performed on the remaining 250 head. Cattle were randomly assigned to treatment (flunixin meglumine and antimicrobial) and control (antimicrobial only) groups as they entered the chute. Temperature >104°F and an average pen weight <750 lbs at the time of arrival, with the calf being on feed for less than 45 days were requirements for enrollment into the study. Calves in the treatment group received flunixin meglumine intravenously at labeled doses (0.5 to 1 mg/lb; 1.1 to 2.2 mg/kg; 1 to 2 mL per 100 lbs) at the time of first treatment and no flunixin meglumine was given on any subsequent treatments. This double-blind study was conducted in two central Kansas commercial feed yards.

Results

The data were analyzed using generalized linear mixed models in SAS 9.0 (SAS Institute, Cary, NC)

and included fixed affects of treatment and month of enrollment with a random affect of feed yard. Initial temperature at first treatment was statistically different ($P=0.02$) with cattle from the treatment group temping 104.9°F and the control group temping 104.7°F. This was an unexpected result as random allocation was utilized. The average body weight for treatment and control groups was 628 lbs and 625 lbs, respectively. These were not statistically different ($P=0.81$). The repull rates for the treatment and control groups were 40.8% and 41.7%, respectively. These values were not statistically different ($P=0.89$). The average temperature for repulled cattle in the treatment and control groups was 103.9°F and 103.8°F, respectively. These values were not statistically different ($P=0.62$). The average body weight of repulled cattle in treatment and control groups was 597 lbs and 632 lbs, respectively. These values were not statistically different ($P=0.19$). The average daily gain between first and second pulls for treatment and control repulled cattle was -1.93 lb and -0.27 lb, respectively. These values were not statistically different ($P=0.48$). The case fatality rate for the treatment and control groups were 15.2% and 17.3%, respectively. These values were not statistically different ($P=0.67$).

Significance

Evaluation of ancillary flunixin meglumine treatment indicates that there is no statistical difference between treatment and control groups with regard to case fatality rate and repull rates. The lack of statistical separation between treatment and control groups questions the perceived economic value of adding ancillary flunixin meglumine to bovine respiratory disease therapy.