

Do we really know how dairy calf treaters make decisions on which calf to treat?

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Introduction

Lack of compliance with protocols on dairy farms is cited as an important reason for drug residues, poor estrus synchronization, and mastitis. In calf-rearing, treatment records are often absent, making it difficult for veterinarians to understand treatment protocol compliance and on what signs treaters rely to make treatment decisions. The objective of this study was to compare clinical observations made by trained investigators with treatment decisions for pre-weaned calves made by farm personnel.

Materials and Methods

Data on clinical observations and treatments for over 400 calves from 4 on-farm clinical trials were merged. Daily clinical observations were made by veterinary or technician investigators for at least the first 28 days of life. Clinical observations included fecal scores (FS, 0=formed to 4=watery with blood; FS \geq 2 was classified as "diarrhea"), attitude (alert or depressed), hydration (based on sunken eyes and skin tent), respiratory score (RS, 0=normal to 4=abdominal labored breathing), as well as presence of swollen joints, ear droop, or navel swelling. Calf treaters on each farm made independent decisions on which calf to treat and with what treatment. Clinical observations and treatments were recorded by investigators into a spreadsheet. Associations between different clinical scores and treatment decisions were evaluated.

Results

Data from a total of 461 calves observed for at least 28 days resulted in 14,019 calf days of observation. Mortality

rate by 28 days was 9.8% across the farms (range 1.5% to 28%). Few calves had FS >1 in the first week of life, but by d 8, 5% of calves did and FS >1 peaked at 13 d of age (47% of calves). Using Chi square for trend, increasing FS was associated with a greater proportion of calf days where attitudes were "depressed". There was no association between fecal score and hydration observations. Over 86% (397) of the calves received at least one treatment. First treatments were initiated from the first day of life to d 28 (average=d 9). Of those first treatments, 27% (109) of the calves had no clinical observations noted by the investigators, and 16% were treated when observers noted a FS=1 with no additional clinical observations. There was no difference in the proportion treated with no clinical signs by farm. Of 127 calves with an initial treatment with observations of FS=0, RS=0, navel=0 and ear=0, 20% received fluids/electrolytes or other supportive therapy and 80% were treated with an antibiotic (spectinomycin sulfate, trimethoprim-sulfa, florfenicol, ceftiofur, or penicillin). There were 507 calf observation days with FS>1 where there were no treatments given.

Significance

For these four calf-raising facilities, there appears to be no direct correlation between clinical observations made by the investigators and the initiation of treatment by farm personnel. The farm personnel were making decisions on antibiotic treatment for which there may not have been enough clinical evidence, particularly for the use of antimicrobials. These data highlight the need for a better understanding of treatment decision-making and the opportunities for veterinarians to help establish and provide feedback on treatment goals and protocols for the judicious use of antimicrobials.