HERD HEALTH AND PRODUCTION MEDICINE

Clinical, hematological and lung evaluations using metaphylactic strategies with tildipirosin for the control of bovine respiratory disease in feedlot cattle

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INTRODUCTION

Metaphylactic antimicrobial therapy has been defined as the mass treatment of animal populations currently experiencing any level of disease before the onset of blatant illness. It can be considered as prevention and curative treatment because cattle arriving to a feedlot facility not only may be at risk of developing BRD but also currently experiencing various stages of the disease process. This management tool is based on the concept of treating the entire population at a single point in time with the goal of decreasing pathogen burden in clinical and subclinical cases.

OBJECTIVE

The study evaluated the effects of a metaphylactic protocol for BRD on the clinical, hematological, and pulmonary outcomes of high-risk feedlot cattle

MATERIALS AND METHODS

Two hundred eight high-risk Crossbred bulls (Bos taurus × Bos indicus), from a commercial feedlot farm (Brazil), were included in the study. High-risk cattle met the enrolment criteria: external source; body condition score between 1 and 2 ; traveled over 500 km for more than 8 hours. Cattle were divided randomly into two groups: Met-Group (n=104) received a single subcutaneous administration of tildipirosin (Zuprevo®, MSD Animal Health) at a dose of 4 mg/kg BW (0.022 mL/Kg BW); Control-Group (n=104) received a subcutaneous administration of 0.9% saline at the same dose. Characterization of BRD was based on the DART system. A blood sample of all cattle with BRD clinical signs was obtained for hemogram. A macroscopic assessment of the lung tissue was initially carried out during the post-mortem inspection. Subclinical cases were considered as animals without clinical signs of BRD and macroscopic lung lesion at slaughter. These lesion scores were adapted from the method described by Griffin (2014). A descriptive analysis was carried out on the data obtained (pulmonary score system). Statistical analysis of the data was performed using the ANOVA test. Student's T test was applied to the hematological variables, with a 5% significance level using the R software

This study concluded that the use of antimicrobial metaphylaxis with tildipirosin in high-risk feedlot cattle reduced the morbidity rate of BRD and resulted in a lower percentage of lung lesions

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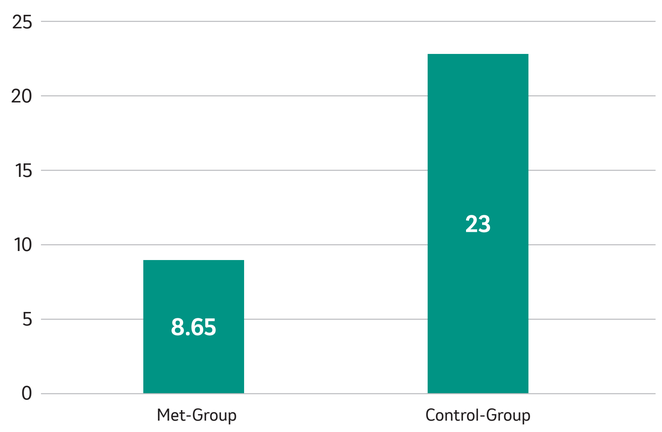
RESULTS

The BRD morbidity rate in Met-Group (8.65%) was lower than in Control-Group (23%).

BRD morbidity rate (%)



Bovine Respiratory Morbidity rate in Met-Group (8.65%) and Control-Group (23%)

RESULTS

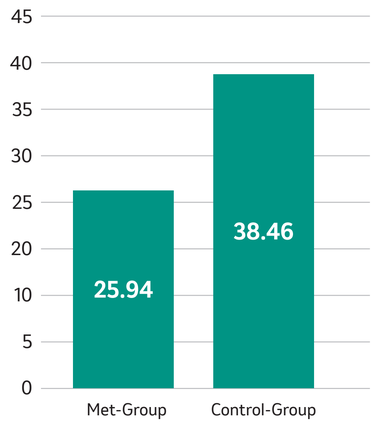
The main clinical signs observed in BRD animals were prostration, as well as nasal and eye discharge. No deaths were reported in either of the groups

Bovine with BRD clinical signs (nasal discharge)

RESULTS

There were no significant differences between groups (p>0.05) in the hematological parameters evaluated for cattle with BRD. In the Met-Group, 27 (25.94%) lungs with lesions were detected, On the other hand, in Control-Group, 40 (38.46%) lungs with lesions were identified

Lungs with lesions (%)

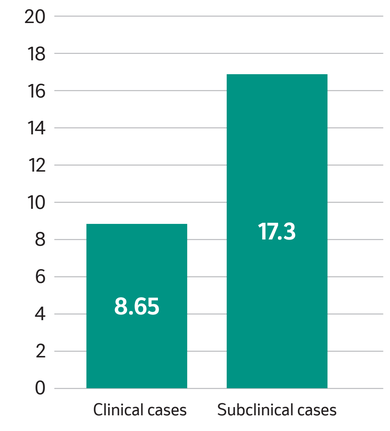


Lungs lesions in the Met-Group (25.94%) and in Control-Group (38.46%)

RESULTS

In the Met-Group, 27 (25.94%) lungs with lesions were detected, but 9 (8.64%) were from animals with clinical signs and 18 (17.30%) were subclinical cases.

Lung lesions in met-group (%)

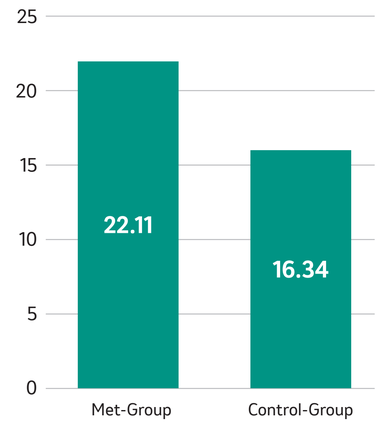


Lungs lesions in the Met-Group: clinical cases (8.64%) e subclinical cases (17.3%)

RESULTS

In Control-Group, 40 (38.46%) lungs with lesions were identified and 23 (22.11%) were from cattle with clinical signs and 17 (16.34%) were from subclinical cases.

Lung lesions in control-group (%)



Lungs lesions in the Control-Group: clinical cases (22,11%) e subclinical cases (16.34%)

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