

Efficacy of Different Dosage Levels and Routes of Inoculation of Tilmicosin in a Natural Outbreak of Infectious Bovine Keratoconjunctivitis

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Introduction

Infectious bovine keratoconjunctivitis (IBK) is a transmissible disease of cattle, affecting beef and dairy herds worldwide. Although several factors can be involved in its pathogenesis, *Moraxella bovis*, a gram negative bacterium, can be considered the etiological agent. Since the disease can produce considerable economic loss in affected herds, several preventive and therapeutic tools are utilized to control it. Current vaccines are not totally effective to prevent the disease, so once an outbreak is detected, administration of antibiotics is indicated in order to avoid spread of infection within the herd and to obtain a more rapid cure of affected animals.

The goal of this work was to test the efficacy of tilmicosin in a natural outbreak of IBK.

Materials and Methods

From a 1250-head pure Hereford breed herd affected with a severe outbreak of IBK, 120 animals showing ocular lesions were set aside without treatment. Bacteriological studies were carried out by swabbing the corneal and conjunctival mucosa of both eyes. The animals were classified according to an appropriate lesion-scoring system and evenly divided into 6 experimental groups. Animals of treatment 1 (T1) were the positive control, being treated with 300 mg of long-acting oxytetracycline intrapalpebrally. T2 was treated with 2.5 mg/kg body weight (BW) of tilmicosin subcutaneously (SC). T3 was treated with 5 mg/kg BW of tilmicosin SC. T4 was treated with 10 mg/kg BW of tilmicosin SC. T5 was treated with 300 mg of tilmicosin

intrapalpebrally. T6, the negative control, was untreated. The animals were observed individually every 7 days for 3 weeks and lesion scores were obtained and recorded. A mean from the lesion score of every treatment in each observation was obtained and compared by Analysis of Variance (ANOVA).

Results and Conclusion

Moraxella bovis was isolated from 60 animals, revealing a high herd infection rate.

- At 7 days post treatment (PT), the mean score of T4 was the lowest (2.55), followed by means from T3 (2.66), T5 (3.10), T1 (3.15), T6 (3.21) and T2 (3.3), but the differences were not significant ($P>0.05$).

- At 14 days PT all groups treated with antibiotics had lower lesion score means than T6 (untreated), with the difference being statistically significant ($P<0.05$). No significant differences were detected among T1 to T5, although the T4 lesion score was the lowest, followed by T3, T5, T2 and T1.

- At 21 days PT T4 had the lowest average lesion score of 1.5 ($P<0.05$), followed by T3 (1.8), T5 (2.1) and T2 (2.3). No differences were detected among T3, T5 and T2 ($P>0.05$). T1 showed an average lesion score of 2.65 that was lower than T6 (3.52) but higher than the other treatments ($P<0.05$).

In conclusion, this trial showed that lesions of IBK healed faster when the animals were treated with antibiotics. IBK lesions seemed to heal faster after the administration of 10mg/kg BW SC of tilmicosin than the other dosage levels of the same drug or oxytetracycline LA.