



BACTERIAL DISEASES

BBD-048

EFFICACY OF A SINGLE INJECTION OF ZACTRAN® FOR SWINE AGAINST *BORDETELLA BRONCHISEPTICA* RESPIRATORY DISEASE IN EXPERIMENTALLY INFECTED PIGLETS

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Introduction

Bordetella bronchiseptica (Bb) is one of the major pathogens involved in Swine Respiratory Disease (SRD). The efficacy of ZACTRAN® for Swine (gamithromycin) against Bb was tested in an experimental pneumonia model.

Material & Methods

Forty 5-week-old SPF piglets were inoculated with 9.3 log₁₀CFU of a virulent Bb by nasal route on D0. Sensitivity of the Bb isolate to gamithromycin was representative of current field pig isolates. On D3, animals were randomly allocated to two groups according to SRD clinical signs. They were administrated either a single dose of ZACTRAN (1mL/25kg IM, n=20), or saline (n=20). Rectal temperature, behavioural observations and respiratory signs were recorded and scored daily from D0 to D13. Ten days post-treatment, all animals were necropsied. Lungs were examined macroscopically for lesions. Lung and trachea were sampled for histology.

Results

The Bb inoculation successfully induced coughing in 50% and sneezing in 45% of animals before treatment. From D3, clinical signs rapidly decreased in treated animals whereas they increased until on D6 in controls before initiation of a self-resolution phase. Global Clinical Scores (GCS) in the treated group were consistently lower than in the control group from D4 onwards (p<0.03 for D5-to-D9 period). Average number of post-treatment diseased days (GCS≥1) was reduced by 74% (1.1 vs 4.3 days, p<0.0001).

Gross lung lesions were characterized by dark, red consolidated areas with well demarcated borders. Severity and frequency of gross lesions were lower in the treated group (p=0.033). The overall lesion score was reduced by 39% in treated animals. Histological results also evidenced minimal to marked bronchio-alveolar and/or pyogranulomatous pneumonia and/or minimal to mild tracheitis of less severity and/or frequency in treated animals.

Conclusion

This study demonstrated efficacy of ZACTRAN for Swine at label dose for the treatment of SRD due to *Bordetella bronchiseptica*, based on lung lesions and clinical signs.