Comparative study to evaluate the efficacy of tylvalosin and tiamulin for the treatment of *Mycoplasma hyopneumoniae* in a commercial pig farm

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Introduction

Mycoplasma hyopneumoniae (Mhp) is the etiological agent of enzootic pneumonia and one of the most important primary pathogens of the porcine respiratory disease complex (PRDC). The infection is highly prevalent around the world, causing non-productive cough and pneumonia in the cranial lung lobes (1,2,3). In addition, the infection leads to reduced performance parameters, resulting in significant economic losses.

The objective of this study was to compare the efficacy of tylvalosin (Aivlosin® 625 mg/g Water Soluble Granules; ECO Animal Health Ltd.) with tiamulin (Denagard® 45% soluble powder; Elanco) for the treatment of Mhp in a group of naturally exposed pigs and to compare production parameters in the two groups.

Materials and Methods

The trial was performed in a 1,000 sow farm located in Argentina and known to be Mhp positive. A total of 4,000 mixed sex pigs were randomly assigned to one of two treatment groups: Group A which received 5 mg tylvalosin/kg BW/day for 5 consecutive days in drinking water or Group B which received 15 mg tiamulin/kg BW/day for 5 consecutive days in drinking water. Both groups were medicated at 30, 70 and 100 days of age. Medicated water was prepared daily with no other source of drinking water until medicated water was exhausted.

Each treatment group of 2,000 pigs was housed in 4 groups of approximately 500 animals. All pigs had *ad libitum* access to feed and water throughout the trial. Diets were formulated to be identical across treatments. Mortality, average daily gain, feed conversion ratio and days to slaughter were measured. Lungs were evaluated at the slaughterhouse using the Christensen method (4). A total of 1,222 lungs were evaluated, 787 for the tylvalosin group and 435 for the tiamulin group. The Student´s t-test was used for statistical analysis.

Results

The tylvalosin group had better results compared to the tiamulin group for mortality (2.05% vs 2.22 %), days to slaughter (167.6 vs 169.3), final weight (114.6 kg vs 114.3 kg) and average daily gain (0.884 kg vs 0.866 kg) though these differences were not statistically significant. A statistically significant difference was observed for feed conversion rate, with the tylvalosin group more efficient than the tiamulin group (2.72 vs 2.87). The percentage of affected lungs with type A, B and C lesions was higher in the tiamulin group than in the tylvalosin group (10.8% vs 1.72%; 14.71% vs 12.71% and 5.06% vs 4.57%, respectively).

Table 1. Health and Production Parameters

Group	Tylvalosin	Tiamulin
Mortality (%)	2.05	2.22
Days to Slaughter	167.6	169.3
Final Weight (kg)	114.6	114.3
ADG (kg)	0.884	0.866
FCR	2.72[a]	2.87[b]
Affected lungs (%)	28.08	31.49
Type A lesion (%)	1.72	10.8
Type B lesion (%)	12.71	14.71
Type C lesion (%)	4.57	5.06

°Superscripts indicate statistically significant differences ($p \leq 0.05$).

Conclusion and Discussion

In this study, tylvalosin was more effective than tiamulin in reducing mortality and lung lesions in pigs naturally infected with Mhp and in recuperating production losses that are associated with enzootic pneumonia.

References

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