Technical Bulletin

Comparison of Zactran® (gamithromycin) and Zuprevo™ (tildipirosin) for Metaphylaxis Treatment of Winter-Placed Feedlot Calves for Control of Bovine Respiratory Disease.

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Summary

A randomized complete-block design trial was conducted in a commercial feedlot in Alberta, Canada, using winter-placed heifer calves (n = 4574; initial body weight 672 ± 43 pounds) to evaluate the efficacy of metaphylactic treatment with Zactran® (gamithromycin) and Zuprevo™ (tildipirosin) for control of bovine respiratory disease. There were no statistically significant differences ($P > 0.05$) in health or feedlot performance between calves treated with ZACTRAN and ZUPREVO from arrival to terminal weight sort, approximately 30 days before slaughter. However, using current drug prices, metaphylactic treatment with ZACTRAN had a net economic advantage of $3.24/head to those treated with ZUPREVO on arrival.

Trial

Four thousand five hundred seventy-four auction market – sourced heifers averaging 672 pounds were shipped to the feed yard and processed on arrival as follows:

- Pyramid® 2 + Type 2 BVD
- Presponse® SQ
- Eight way clostridial + *H. somnus*
- Implanted and dewormed
- Received metaphylactic ZACTRAN or ZUPREVO

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Cattle First. Boehringer Ingelheim

Results

Table 1. Comparison of gamithromycin and tildipirosin metaphylaxis on morbidity and mortality in winter-placed feedlot heifer calves at moderate risk of developing bovine respiratory disease (BRD).

Health Variable	Experimental Group		RR (95% CI)	*P*-value
	Gamithromycin[a]	Tildipirosin[b]		
No. of pens	10	10	—	—
No. of animals	2,287	2,287	—	—
First BRD (UF+NF) treatment, %	5.6	4.7	1.2 (0.91–1.48)	0.23
First UF[c] treatment, %	5.0	4.3	1.2 (0.88–1.49)	0.30
First NF[d] treatment, %	0.56	0.44	1.3 (0.57–2.93)	0.53
First BRD (UF+NF) relapse, %	20.3	14.9	1.4 (0.79–2.60)	0.23
First UF relapse, %	22.9	15.6	1.5 (0.80–2.69)	0.22
First NF relapse, %	5.0	5.0	1.0 (0.06–15.3)	0.99
Second BRD (UF+NF) relapse, %	38.9	23.3	1.7 (0.32–1.67)	0.42
Second UF relapse, %	38.9	23.3	1.7 (0.32–1.67)	0.25
Second NF relapse, %	0	0	—	—
Third BRD (UF+NF) relapse, %	0	0	—	—
Third UF relapse, %	0	0	—	—
Third NF relapse, %	0	0	—	—
First ART[e] treatment, %	1.2	1.5	0.8 (0.48–1.31)	0.37
First ART relapse, %	4.0	7.0	0.6 (0.04–1.64)	0.57
Crude mortality, %	0.70	0.57	1.2 (0.59–2.53)	0.56
BRDHS[f] mortality, %	0.26	0.26	1.0 (0.32–3.06)	0.99
Removals, %	0.87	0.66	1.3 (0.47–2.86)	0.96

[a] Zactran,® Merial Canada, Baie-D'Urfé, Quebec
[b] Zuprevo,™ Merck Animal Health, Intervet Canada Corp., Kirkland, Quebec
[c] UF = undifferentiated fever
[d] NF = no fever
[e] ART = arthritis
[f] BRDHS = bovine respiratory disease and *Histophilus somni* disease

Table 2. Comparison of gamithromycin versus tildipirosin metaphylaxis on feedlot performance of winter-placed feedlot heifer calves at moderate risk of developing bovine respiratory disease.

Health Variable	Experimental Group		SEM	*P*-value
	Gamithromycin[g]	Tildipirosin[h]		
No. head/pen	229	229	3.75	1.00
Avg. arrival weight, lbs	672	671	2.13	0.71
Avg. terminal sort weight, lbs[i]	1,247	1,248	4.38	0.94
Avg. weight gain, lbs	575	577	5.31	0.63
DOF[j]	186	186	0.00	1.00
DDMI,[k] lbs	21.5	21.6	0.06	0.11
ADG,[l] lbs/day	3.08	3.10	0.03	0.48
DMC,[m] lb/lb	6.99	6.97	0.08	0.84

[g] Zactran,® Merial Canada, Baie-D'Urfe, Quebec
[h] Zuprevo,™ Merck Animal Health, Intervet Canada Corp., Kirkland, Quebec
[i] Sort weight = live body weight collected at approximately 30 days prior to slaughter
[j] DOF = days-on-feed, from arrival to terminal weight sort
[k] DDMI = daily dry matter intake, from arrival to terminal weight sort
[l] ADG = average daily gain, from arrival to terminal weight sort
[m] DMC = dry matter conversion, from arrival to terminal weight sort

Conclusions

No differences were noted between metaphylactic treatment with ZACTRAN versus ZUPREVO when comparing health (morbidity and mortality) or performance variables. ZACTRAN did have an economic advantage of $3.24/head (CA) or $2.53*/head (U.S.) in cost saving in this study.

*Conversion rates as of 11/28/17.

Important Safety Information: For use in cattle only. Do not treat cattle within 35 days of slaughter. Because a discard time in milk has not been established, do not use in female dairy cattle 20 months of age or older, or in calves to be processed for veal. The effects of ZACTRAN on bovine reproductive performance, pregnancy and lactation have not been determined. Subcutaneous injection may cause a transient local tissue reaction in some cattle that may result in trim loss of edible tissues at slaughter. NOT FOR USE IN HUMANS. KEEP OUT OF REACH OF CHILDREN.