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A field study of Catosal® on incidence and duration of diarrhoea in suckling piglets in Thailand

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Introduction and objectives

Catosal® is a veterinary metabolic stimulant and tonic containing 100 mg of butafosfan and 0.05 mg of cyanocobalamin (vitamin B12) per ml. Preliminary evidence indicates that Catosal® is able to reduce stress responses in pigs (1–3). In piglets, the stress caused by the undesirable diarrhoea and poor performance during suckling period is known as a reason for illness and death. The intensive use of antibiotics against diarrhoea in piglets caused by *E. coli* may promote bacterial resistance. However, the demand for minimal use of antibiotics challenges scientists to explore alternative ways to reduce stress and enhance piglets' health and performance. In this study, the effects of a supportive treatment of piglets with Catosal® during suckling were investigated under Thai practice conditions. It was assessed whether the diarrhoea patterns (score, incidence and duration) and the daily weight gain of suckling piglets from birth to weaning differ in Catosal®-treated animals as compared to a negative control group treated with saline only.

Materials and methods

For this non-masked placebo-controlled study, the litters of 13 healthy late-term pregnant crossbred sows (Duroc x Landrace) from a 6,000 sows-normal herd located in the central part of Thailand were randomly allocated to either a control group (control, 6 litters, n = 67 piglets) or to the treatment group (Catosal®, 7 litters, n = 78 piglets), respectively. In the treatment group, piglets were given Catosal® at a dose volume of 0.2 ml/kg b.w. (corresponding to 20 mg butafosfan/kg b.w.), administered as a single intramuscular injection at time of iron injection (3-days-old piglets). The control group received normal saline at the same dose volume as the treatment group. The piglet performance (litter weight at birth and at weaning on day 26) and important health data (piglet mortality until weaning, diarrhoea score, incidence and duration of diarrhoea per litter and requirement of antibiotic treatment of piglets with diarrhoea) were evaluated. Diarrhoea scores were defined as follows: (i) no diarrhoea; (ii) piglets developed mild diarrhoea and (iii) piglets suffered from severe diarrhoea and looked pale with a rough coat, slackened flanks and lethargy.

Results and discussion

Counts of viable born piglets and their litter weights at birth were not different ($p > 0.05$) between both groups (Table 1) indicating homogeneity of study groups at baseline. The incidence of diarrhoea was significantly lower in the Catosal®-treated piglets as compared to controls ($p < 0.05$). The Catosal®-treated piglets also had a significantly ($p < 0.05$) shorter duration of diarrhoea periods from birth until weaning than the control piglets by at least two days. In addition, the diarrhoea scores tended ($0.1 > p > 0.05$) to be lower in the Catosal® group. In support of these findings, diarrhoea requiring injected antibiotic treatment was reduced in average, the average daily weight gain was higher by 4.74 g/day, and piglet mortality until weaning was lower in Catosal®-treated piglets versus control piglets. These observations did, however, not achieve the level of statistical significance.



Table 1: Effect of Catosal® on piglets performance and diarrhoea data from birth to weaning (mean values with different superscripts (a or b) are significantly different from each other at $p < 0.05$).

Data from birth to weaning (26 days)	Control (saline) n = 67		Catosal® (0.2 ml/kg) n = 78		P value
	Mean	SD	Mean	SD	
Viable born alive piglets (N per litter)	11.17	1.94	11.14	1.35	0.5000
Average birth weight (kg)	1.82	0.14	1.84	0.15	0.2258
Average weaning weight (kg)	7.12	0.17	7.31	0.30	0.0957
Prewaning mortality (%)	13.43	13.46	11.54	11.73	0.4756
Daily weight gain (g/day)	203.83	10.19	208.57	13.28	0.2413
Diarrhoea score	1.48	0.28	1.29	0.15	0.0802
Diarrhoea incidence until weaning (%)	14.17 ^a	0.82	10.07 ^b	1.37	0.00003
Overall duration of diarrhoea (days)	8.33 ^a	0.82	6.14 ^b	0.90	0.0004
Diarrhoea pigs requiring antibiotic injections (%)	17.54	12.15	10.90	9.64	0.1694

Conclusion

Single injection of piglets with Catosal® at a dose volume of 0.2 ml/kg b.w. at the time of iron injection appears to reduce the incidence and the duration of diarrhoea including less antibiotics treatments of those diarrhoeal piglets from birth to weaning.

References

1. Clarke JJ *et al.* (1998). Proc. 15th IPVS Congress, p. 23.
2. Nuntaprasert A, Watanapongchart S (2006). Proc. 19th IPVS Congress, p. 487.
3. Van Der Staay FJ *et al.* (2007). J Ved Pharmacol Therap, 30: 410–416.