The effect of pain relief at castration on piglet performance

Sarah Taylor¹, BSc; Robert M. Friendship¹, DVM, MSc, DipABVP; Glen Cassar¹, DVM
¹University of Guelph, Guelph, Ontario, Canada

Background
There is growing public concern for the welfare of farm animals. Castration of male piglets without the use of anaesthesia or analgesia is one particular area that has drawn attention. To date there are few research studies that have evaluated the use of analgesia for this procedure and whether pain relief might be associated with improved piglet performance.

The objective of this study was to determine if piglet performance could be improved by using analgesia during castration.

Methodology
Male piglets between 5 and 7 d of age were ear notched, weighed, then randomly selected into control (n = 700) and treatment (n = 700) groups and given an injection (IM) of either saline solution or Anafen® (Ketoprofen injection 100 mg/mL 1 mL/50 kg body weight), respectively. A sample size calculation was performed to determine the number of piglets required to demonstrate a 225g/day increase in average daily gain (ADG) with 95% confidence. Piglets were then castrated 30 min after receiving the injection, and 10 min after castration piglets were observed for signs of discomfort. A final weight was taken at 21 d of age, and mortality was recorded.

Statistics included a linear mixed model with litter as a random effect and adjusting for initial weight, parity of a sow and litter size to determine differences in ADG. Mortality was analyzed using logistic regression with litter as a random effect and adjusting for initial weight, parity of a sow and litter size. Interactions between treatment and other variables were tested.

Preliminary results
Results (to date) demonstrate no apparent difference in both the ADG and mortality of male piglets in both the control (n = 410) and treatment (n = 416) groups. No difference was noted in post-castration behaviour between the groups. The use of analgesia increased the time to castrate and cost $0.22/piglet.

Discussion
Based on these preliminary data and data from previous studies, there does not appear to be an economic benefit from providing analgesia to piglets at castration. Previous work involving the use of either local or general anaesthetics at the time of castration do not alter weight gain, have not proven to lower cortisol levels and are associated with higher mortality rates.¹,² In the case of general anaesthetics, there are increased time and monetary costs when compared to the use of ketoprofen.³

Further analysis or future studies might show that in specific cases such as castrating low weight piglets, the use of an intramuscular analgesic, such as ketoprofen, may be warranted from a performance standpoint. In general, the decision of the swine industry to use analgesia will most likely be based on ethical concerns for piglet welfare and not on financial returns.

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References