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Efficacy of Ceftiofur Sodium for the Control of Colibacillosis in Neonatal Swine

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Introduction Neonatal diarrhea occurring in the first few days of life is commonly associated with enterotoxigenic *E. coli* infection in the jejunum and ileum. This study evaluated the efficacy of ceftiofur sodium (Naxcel®) administered IM to piglets at 0, 3 or 5 mg ceftiofur equivalents/kg for three days for the treatment of induced colibacillosis.

General information Gilts susceptible to K88+ *E. coli* (ceftiofur MIC=0.5 μg/mL) were obtained. Based on farrowing order, litters were randomly assigned to one of four treatments: no challenge/no treatment (n=6 litters), challenge/saline (n=7 litters), challenge/Naxcel at 3 mg/kg (n=8 litters) or challenge/Naxcel at 5 mg/kg (n=8 litters). Challenges (2-4 x 10^9 CFU) were administered within 7 hours of farrowing; the first treatment was administered 6 h later. Two subsequent treatments were administered at 24 h intervals. Clinical evaluations were conducted twice daily through day 7. At each observation, body weight, diarrhea score and illness index score were recorded. Colibacillosis deaths were recorded. Ceftiofur treatments were compared to saline using SAS's PROC MIXED.

Mortality due to colibacillosis Mortality rates were 2.0, 48.3, 6.0 (p=.003) and 6.2% (p=.003) for no challenge/no treatment, challenge/saline, challenge/3 mg/kg and challenge/5 mg/kg, respectively.

Diarrhea scores Normal stool scores were seen at 87.3, 72.2, 90.1 (p=.007) and 89.0% (p=.009) of observations for no challenge/no treatment, challenge/saline, challenge/3 mg/kg and challenge/5 mg/kg, respectively.

Average daily gain There were no significant differences.

Ceftiofur sodium administered daily for three consecutive days reduced mortality due to induced colibacillosis and increased normal diarrhea scores in this challenge study.