Effect of Excenel RTU® and Polyflex® on cure and reproductive performance of dairy cows diagnosed with acute puerperal metritis

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The objective of the study was to evaluate the effect of Excenel RTU® and Polyflex® for acute puerperal metritis on cure and reproductive performance in dairy cows as compared to non-metritic control cows. Cows were monitored daily for 10 days from day 1 post-calving. Cows (N=500) with rectal temperature >39.4 °C (<103.0 °F) and atonic uterus, malodorous, watery vaginal or uterine discharge were classified as metritic cows and were randomly allocated to one of two treatment groups. Cows in CEF group (N=251) received 2.2 mg/kg BW of ceftiofur hydrochloride (Excenel RTU®, Pfizer Animal Health, New York, NY) IM, once daily for 5 days. Cows in AMP group (N=249) received 2.3 mg/kg BW of ampicillin sodium (Polyflex®, Boehringer Ingelheim Pharm Inc, Ridgefield, CT) IM, once daily for 5 days. All cows received supportive therapy and any cow whose condition was life threatening was deemed a treatment failure and given alternative treatment. Cows (CON; N=470) with no signs of metritis and rectal temperature >39.4 °C were classified as non-metritic control for comparison. These cows were matched to treated cows by DIM and parity. The outcomes measured were cure at 10 days post-treatment (metritis Y/N) and cure at 33 days post-treatment (uterus and cervix size, and presence or absence of discharge). Cows were monitored through the completion of the lactation, or until 525 days post-calving. PROC LOGISTIC was used to model the cumulative probability of cure at 10 and 33 days and PROC PHREG of SAS was used to determine the daily pregnancy risk and time to first service for treated and control groups.

There was no difference in cure at 10 days and cure at 33 days between CEF and AMP (P>0.05) and no difference in daily pregnancy risk and first service risk between CEF and AMP treatment groups (P>0.05). The daily pregnancy risk was reduced 23% for cows treated with ceftiofur and 28% for cows treated with ampicillin compared to CON group (P<0.01). The first service risk was reduced by 23% for CEF group and by 28% for AMP group compared to CON group (P<0.01). The service per conception was 3.3, 3.7 and 3.7 for CON, CEF and AMP groups, respectively. In conclusion, dairy cows diagnosed with acute puerperal metritis that received either Excenel RTU® or Polyflex® IM once daily for 5 days showed no difference in cure, and showed similar reproductive performances. However their reproductive performance was reduced compared to their cohort of non-metritic control cows.

Keywords: Dairy cattle, uterine disease, parenteral antibiotic, cure, reproductive performance