

sonography four times in each cow: at the time of the second GnRH injection, at the time of AI, and at 26 hrs and 40 hrs after the second GnRH injection. Milk samples were collected four times: 7 days prior to first GnRH injection; at the first GnRH and PGF_{2α} injections; and prior to AI. The first two milk samples were collected to determine stage of estrus cycle at the start of the Ovsynch protocol. The third milk sample was collected to determine the presence of a C.L. at the time of PGF_{2α} injection. The fourth sample was collected to determine complete regression of the C.L.

Results and Conclusions

In the Ovsynch group, 89.6% of all synchronized animals ovulated during a 40-hour period following the

second injection of GnRH. The percentage of follicles ovulating between 0 to 17 hours, 17 to 26 hours and 26 to 40 hours was 9.7, 21.5 and 58.3%, respectively. Conception rate for the first AI did not differ between different stages of cycle (25.0, 37.0, 33.3, 36.1% respectively). A corpus luteum was demonstrated in 60.7% of cows in the Ovsynch group at the time of PGF_{2α} treatment.

Conception rate on first AI was similar for the Ovsynch and the PGF_{2α} group (37.9% vs. 41.7%). Service rate was higher (91.8% vs. 69.8%) and mean days to first AI were lower (77.2 ± 11.4 vs. 86.2 ± 18.7) in the Ovsynch group than in the Prostaglandin F_{2α} group. Average days open did not differ between the groups (99.3 ± 33.0 vs. 104.6 ± 32.4). Thus, both protocols may allow effective management of AI in dairy cows.

A Multi-location Clinical Study of Ceftiofur for the Treatment of Postpartum Cows with Elevated Temperature and other Complications

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Introduction

Dairy cows face the biggest challenges at freshening. The so-called "postpartum disease complex" consists of ketosis, displaced abomasum, hypocalcemia, mastitis, milk fever and postpartum or puerperal metritis. These occur around calving. Selecting an appropriate treatment is challenging and debatable. The objective of this study was to evaluate the effect of ceftiofur in postpartum cows with elevated temperatures and other complications on their health and milk production under field conditions worldwide.

Materials and Methods

Fresh cows were enrolled from 12 locations worldwide when rectal temperatures were $\geq 39.5^\circ\text{C}$ or 103.1°F for the first 10 days postpartum. The cows were randomly assigned to receive 1 mg ceftiofur equivalent (CE)/kg (0.45 mg/lb) body weight at enrollment and every 24 hours until three treatments were administered, or to receive no treatment. The primary variable was cure, as measured by temperature $< 103.1^\circ\text{F}$ (39.5°C), no other antibiotic therapies used, and absence of clinical signs of illness when evaluated on Day 9 or 10 after

enrollment. Milk yield and other related variables were also evaluated.

Results and Conclusions

Of 437 cows enrolled in this study, 330 cows were eligible for the final analysis. The analysis of cure rate indicated a moderately significant interaction between treatment and vaginal discharge at enrollment ($P = 0.066$). Ceftiofur-treated cows were significantly more likely to be cured than untreated cows, given the presence of vaginal discharge at enrollment ($P = 0.003$, 56.0% vs. 28.9%, respectively). No difference was found for cows without discharge at enrollment. A significant interaction between treatment and calving outcome ($P = 0.007$) was also found in milk yield. With the presence of abnormal calving, ceftiofur-treated cows on average had a higher milk yield by more than 5 lbs (32.27 lbs for ceftiofur vs. 28.13 lbs for control, $P = 0.004$). No differ-

ence was found for cows with normal calving. Analysis of the rectal temperature difference between enrollment and the average of Days 9 and 10 indicated a significantly greater reduction in rectal temperature for the ceftiofur group than the control group ($P = 0.021$). The mean reduction in the control group was 1.87°F and in the ceftiofur group it was 2.14°F.

In conclusion, parenteral administration of ceftiofur at the dose of 1 mg/kg for three consecutive days in dairy cows with fever and vaginal discharge after parturition significantly improved their cure rate compared with untreated cows (56.0% vs. 28.9%). Odds of a cure were 3.14 times higher when using ceftiofur. The pyretic fresh cows treated with ceftiofur also had higher milk yield when prior abnormal calving (retained placenta, retained fetus, twins and assisted calving) had occurred. The treatment effect also included significant reduction in rectal temperature.