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EXAMPLE OF POSTER ABSTRACT FORMAT

COMPARISON OF TWO TREATMENTS FOR CLINICAL MASTITIS USING CEFQUINOME (COBACTAN®).

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Cefquinome, a 4th generation cephalosporin, has been shown to be effective against a broad range of mastitis pathogens, including *E. coli* and *S. uberis* (2 & 3). An advantage of Cefquinome compared to other antimicrobials is its enhanced ability to cross the blood-udder barrier and to be effective in mammary gland tissue (1).

In a field study the effect of a combined intramammary and parenteral application of Cefquinome in cases of clinical mastitis was compared to intramammary treatment alone. Cows on six dairy farms (n=181) in Devon which were diagnosed as having clinical mastitis were randomly allocated to one of two treatment groups. Group A received an intramammary infusion of 75 mg of cefquinome on three occasions 12 hours apart starting at 0 hours, Group B was treated with an intramammary infusion of cefquinome as in group A in combination with an intramuscular injection of 625 mg of cefquinome at 0 and 24 hours. Milk samples were taken at day 0, 7, 14 and 21 and routine bacteriology and somatic cell count (SCC) measurements were undertaken. Farmers recorded clinical alterations of the affected quarter, the milk and the demeanour of the cow using a visual analogue scale. Cows in which the treatment did not succeed and that required additional treatment were labelled as “fail” (n=41), while cows that were shown to have a yeast infection, developed mastitis in another quarter within 21 days or had a teat lesion were labelled “off trial” and omitted from the study (n=17).

The number of treatment failures within each of the study groups was assessed using the chi square test. There was no statistical difference between the groups.

The milk samples taken on day 7 and 21 were assessed for their SCC. The change of SCC after infection was analysed using the Mann-Whitney-U-test and showed a statistically significant steeper reduction of cell count if the combined treatment was used (p = 0.018).

Milk samples taken on day 21 were examined for bacteriology and labelled as “fail” if the initial pathogen was found with ≥ 3 colony forming units (CFU), irrespective of possible re-infections. Using Fisher’s exact test, no statistically significant difference between the treatment groups was found.

No significant difference was found for clinical appearance (score) of the affected quarter, milk quality and demeanour of the cow when a Mann-Whitney-U-test was used to determine whether the outcome on day 21 was different for these scores.

These preliminary findings show a significantly sharper reduction of SCC if cefquinome was used in combination of intramammary and parenteral preparations. Thus although bacteriological results showed no significant difference, the combined treatment may have economical advantages. Further analysis is needed to assess the advantages of the treatment.

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REFERENCES

1. Ehinger, A.M., Schmidt, H. and Kietzmann, M. (2006). Tissue distribution of cefquinome after intramammary and “systemic” administration in the isolated perfused bovine udder. *The Veterinary Journal* **172**, 147-153.
2. Limbert, M., Isert, D., Klesel N., Markus, A., Seeger, K., Seibert, G. and Schrunner, E. (1991). Antibacterial activities in vitro and in vivo and pharmacokinetics of cefquinome (HR 111V), a new broad-spectrum cephalosporin. *Antimicrobial Agents and Chemotherapy* **35**, 14-19.
3. Shpiegel, N.Y., Levin, D., Winkler, M., Saran, A., Ziv, G. and Böttner, A. (1997). Efficacy of Cefquinome for treatment of cows with mastitis experimentally induced using *Escherichia coli*. *J. Dairy Sci.*, **80**, 318-323.