

there was no interaction between treatment group and day. The penicillin and ceftiofur group had a lower rectal temperature than cows in the penicillin + oxytetracycline group during the five day treatment period. The percent milk weight change from the previous day was greater in the penicillin group than in the ceftiofur group but, not different from the penicillin + oxytetracycline group. There was no difference in se-

rum ionized calcium concentration between groups during the five day treatment period. Temperature on the last day of treatment was not different among the three groups. Milk weight on day 12 was not different among the three groups. This study suggests that there is no difference in treatment efficacy of various antibiotics on cows affected with toxic metritis.

The Effect of Multiple Postpartum Prostaglandin Treatments on the Fertility of Dairy Cattle at Risk of Endometritis

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Abstract

This report focuses on the use of multiple doses of Prostaglandin to enhance fertility in animals at risk for endometritis. Cows at risk for endometritis were defined as those with retained placentas, assisted calvings, twins, or grossly abnormal uterine discharges. Cows were randomly assigned to a treatment group consisting of 3 injections of Prostaglandin $F_{2\alpha}$ (PGF $_{2\alpha}$) given at approximately weekly intervals (3-10 days (d), 10-17 d, 17-24 d) postpartum and a control group consisting of a single injection of PGF $_{2\alpha}$ given at 17-24 d postpartum. There was no added benefit of 3 injections of PGF $_{2\alpha}$ given at approximately weekly intervals (3-10 d, 10-17 d, 17-24 d) compared to a single injection of PGF $_{2\alpha}$ given at 17-24 d postpartum.

Prostaglandin (PG) is commonly used as a therapeutic agent in postpartum dairy cattle. The mechanisms of action of PG on the uterus are not well understood. Many protocols using various doses of PG in normal and diseased cattle have been evaluated. There are conflicting reports as to the benefits of these programs. This report focuses on the use of multiple doses of PG to enhance fertility in animals at risk for endometritis.

This study utilized 292 cows from three commercial dairy farms. Cows at risk for endometritis were defined as those with retained placentas, assisted

calvings, or twins. These cows were enrolled in the study without rectal examination of the uterus. In addition, cows with grossly abnormal discharges or gas in the uterus as determined by rectal palpation 3-10 days (d) postpartum were enrolled in the study. Cows were randomly assigned to either the treatment or control group.

Cows in the treatment group received 3 injections of Prostaglandin $F_{2\alpha}$ (PGF $_{2\alpha}$). The first injection was given 3-10 d after parturition and subsequent injections were given at weekly intervals thereafter (10-17 d and 17-24 d postpartum). Cows in the control group received 2 injections of saline (3-10 d and 10-17 d postpartum) and one injection of PGF $_{2\alpha}$ between 17-24 d postpartum. Each herd used a farm specific breeding program. All cows in the study were checked for pregnancy 33-46 days after the last insemination.

Primary outcome variables were first-insemination pregnancy rates (number of pregnancies to first insemination/time), overall pregnancy rates (number of pregnancies/time) and average days to first insemination. The data was evaluated using survival analysis. There were no differences in first-insemination pregnancy rates or overall pregnancy rates between treatment groups. There was no difference in average days to first breeding between treatment groups as analyzed by the Wilcoxin Rank Sum test.

It appears that compared to a single injection given at 17-24 d postpartum, there is no added benefit of 3 injections of PGF_{2α} given at approximately weekly intervals (3-10 d, 10-17 d, 17-24 d) in cows at risk for endometritis.

This study confirms results from previous studies

that suggested further consideration be given to the timing and frequency of PG injections postpartum. In addition, it is necessary to establish the criteria used to select cows for treatment and to determine whether all cows, all normal cows or selected diseased cows should be included in PG postpartum treatment protocols.

^a*Lutalyse Sterile Solution supplied by The Upjohn Company, Kalamazoo, Mich.*

Otitis Media in Dairy Calves: A Preliminary Case Report

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A large dairy herd in north-central Florida has observed otitis media in their pre-weaned heifer calves. The initial clinical sign of otitis media was facial paralysis, presenting as ear droop and epiphora. Affected calves sometimes developed ataxia and other severe neurologic signs indicating a progression of the infection to otitis interna and meningitis. Previous or concurrent respiratory infections were common. In previous years, the incidence of otitis media in this herd has been 0.5 to 1.0%. In the early autumn months of 1994, the incidence of otitis media in the heifer calves increased to approximately 15%. In order to attempt to identify the primary etiologic agent(s) in this difficult-to-treat disease, the owner of the dairy agreed to retain bull calves for an intensive diagnostic workup. Bull calves were treated similar to heifer calves; they were fed the same amount of colostrum and housed such that nose to nose and oral-fecal contact was permitted. Bull calves were chosen for necropsy based upon having early, subtle signs of respiratory disease or otitis media. In some cases, bulls were randomly selected for necropsy based upon pyrexia or signs of depression and weakness. A full necropsy was performed with special emphasis

placed upon the oropharyngeal area, respiratory tract and middle ear. All calves with positive signs of infection on gross necropsy had lung and tympanic bullae cultures taken for aerobic, anaerobic, and mycoplasma growth. Selected cases were also cultured for viruses. Most heifer calves which died or were terminally ill were also necropsied during the autumn of 1994. In many cases, cultures were taken of lungs and/or tympanic bullae. Cultures from both the bull and heifer calves yielded a number of mixed infections. The most common microorganism isolated was *Mycoplasma bovis*; *Actinomyces pyogenes* was often found with *M. bovis*. Of the cases where mycoplasma culture was attempted, 43% of the tympanic bullae and 55% of the lungs were positive. Anaerobic and viral cultures were negative. Whether *M. bovis* was a primary pathogen or just a secondary invader in the tympanic bullae was not determined. Attempts to isolate *M. bovis* from calf feeding equipment or colostrum were unsuccessful. A serologic survey of one and 8 week old heifer calves during this same time period demonstrated no strong exposure to the respiratory viruses IBR, BVD, or BRSV.