

## **Prevalence of Recurrent Clinical Disease and Characterization of Lesions Associated with Papillomatous Digital Dermatitis**

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Hairy heel wart or papillomatous digital dermatitis (PDD) is a frequent and significant cause of lameness in confinement dairies. PDD is associated with a spirochete-like organism that is commonly treated with a topical antimicrobial. While treatment is initially effective, there is a concern that complete bacteriologic cure is not achieved and a significant number of cows suffer from recurrent clinical episodes. Therefore, the objectives of this study were to determine the prevalence of recurrent PDD and better characterize the clinical disease in a 1500 cow, free stall dairy. The first part of the study was a retrospective analysis of PDD events recorded in Dairy Comp 305. Of 659 cows with a PDD event recorded, 121 (18.4%) experienced at least one recurrent clinical episode (RPDD). RPDD occurred from 3 to 200 days after initial treatment. Twenty-five, 65 and 90 % of RPDD occurred within 30, 60 and 90 days of initial treatment respectively. The high frequency of RPDD within 90 days of initial treatment suggests these recurrent episodes may have been due to failure to achieve a bacteriologic cure within the lesion. The second part of the study was a prospective analysis to better characterize PDD lesions and evaluate treatment results. Lameness cows with PDD were included in the study. Enrolled cows received a lameness score and were treated (day 0). Lesion location, size and character (erosive vs. proliferative) as well as heel and toe length of affected and contralateral unaffected claws was also recorded. Treated cows were then lameness scored on days 1, 2, 4, 8, 15, and 21 or until two consecutive checks recorded a non-lame status. Cows showing no improvement within one week were reevaluated and retreated as needed. Days to resolution (DTR) of the lameness and recurrent events within three months were quantified and evaluated. The difference in the ratio of heel to toe length of affected and unaffected feet (HTDIF) was calculated. Seventy-eight cows with PDD were enrolled and 58, 37 and 5 % were lameness score 2, 3, and 4 respectively on initial evaluation. Twenty-two (28%) cows were LS=1 by day 2, 39 (49%) cows were LS=1 by day 3, 47 (59%) cows were LS=1 by day 5, 57 (72%) cows were LS=1 by day 9. Twenty-seven (34%) cows had erosive type lesions, 52 (66%) cows had proliferative type lesions. Forty-three (55%) cows had lesions on their heels, 21 (27%) cows had lesions on the dorsum of their feet, and 11 (14%) cows had lesions in the interdigital space. Thirty cows were treated with topical oxytetracycline and 49 cows were treated with topical tylosin. Both treatment groups had similar recurrence rates, though cows treated with Oxytetracycline tended to recur later (median = 19 days) than cows treated with Tylosin (median = 13 days). There was a trend that cows with a greater LS at initial evaluation had a greater HTDIF. In cows with LS=4, the HTDIF is statistically ( $p<0.05$ ) greater than the HTDIF of cows with LS=2; but cows with LS=3 were not significantly different from either one. We hypothesize that the HTDIF is greater in cows with LS=4 than cows with LS=2 because the lesion is more painful or the lesion has been present for a longer period of time. Cows with LS=3 were 5.5 times more likely to have DTR >2 than cows with LS=2. A trend exists that cows with rear limb lesions have a higher DTR than cows with front limb lesions ( $p=0.056$ ). There appears to be no effect of the type of lesion, lesion location or treatment performed on the DTR. Treatment of foot wart events with Oxytetracycline vs. Tylosin apparently had no difference between amount of recurrent events or days to recurrence.