

ter-month, respectively. The role of OrbeSeal^a is to act as a physical barrier to environmental organisms, therefore statistical comparison of the incidence rate was conducted excluding CM cases caused by *Staphylococcus aureus*, *Corynebacterium bovis* and *Actinomyces pyogenes*. While statistically significant differences were not found, there was a strong trend toward decreasing CM in OS-treated animals. Using DC-treated animals as reference, the odds ratio of having CM was .48 (p=0.19) for animals receiving OS alone and .28 (p=0.12) for animals receiving both OS and DC.

Significance

Prevention of new dry cow IMI is a control point for decreasing clinical mastitis post-calving. Preliminary findings from this project revealed that the odds of culture-negative quarters developing new IMI were 1.4 times higher in quarters treated with DCT compared with OS (p=0.07). In this study, there was a strong trend toward decreased CM due to environmental pathogens in OS-treated animals. These findings highlight the importance of establishing and maintaining an excellent dry cow udder health program, which emphasizes all management strategies to reduce new IMI. The addition of internal teat sealants could play an important role in dry cow programs by increasing protection against environmental pathogens acquired in the dry period.

Footnote

^aTrade-mark of Pfizer Products Inc, Pfizer Canada Inc. licensee

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Antimicrobial Treatment Strategies for Streptococcal and Staphylococcal Mastitis

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Introduction

Mastitis is one of the most costly diseases encountered by a dairyman. Traditional therapy aimed at curing clinical mastitis cases includes intramammary (IMM) antimicrobial therapy. Most, if not all, commercially available IMM antimicrobial products are effective only against gram-positive organisms, mainly streptococcal and staphylococcal species. In spite of multiple available IMM antimicrobial products, cure rates for clinical mastitis run about 46% for strep spe-

cies, 21% for staph species, and 9% for *Staphylococcus aureus* mastitis. This study investigated the use of systemic antimicrobial therapy (ampicillin) in conjunction with IMM antimicrobial therapy for strep species., staph species., and *S. aureus* on a commercial dairy.

Materials and Methods

On a 3,000 Holstein cow commercial dairy, milk from clinical mastitis cases was cultured on blood agar using standard culture techniques (2). All cows with a

strep species (n=80), staph species (n=60), or *S. aureus* (n=25) positive culture result were enrolled in the trial. Each enrolled cow was assigned one of three treatments based on a randomized six-block table. For strep species, cows were either not treated, treated with IMM Amoximast once a day for five days, or treated with IMM amoximast plus 30 ml polyflex IM once a day for five days. For staph species and *S. aureus* cows were either not treated, treated with IMM Pirsue once a day for five days, or treated with IMM Pirsue plus 30 ml Polyflex IM once a day for five days. One milk sample was collected from the affected quarters 21-28-days after completion of antimicrobial therapy and cultured. A cow was considered cured if there was no growth on the 21-28 day culture. Days until clinical cure, days in hospital, somatic cell count (SCC), milk production, previous mastitis events, lost quarters and whether the cow was sold/died were all recorded.

Results

Strep species mastitis

Within the no-treatment group, 5/9 cows were cured, two cows lost a quarter and five cows were sold/died. Within the IMM Amoximast group, 4/8 cows were cured, three cows lost a quarter and three cows were sold/died. Within the IMM Amoximast plus Polyflex group, 11/12 cows were cured, two cows lost a quarter and no cows were sold/died.

Strep species mastitis

Within the no-treatment group, 1/2 cows were cured, one cow lost a quarter and one cow was sold/died. Within the IMM Pirsue group, 3/5 cows were cured, two cows lost a quarter and one cow was sold/died. Within the IMM Pirsue plus Polyflex group, 3/10 cows were cured, one cow lost a quarter, and no cows were sold/died.

S. aureus mastitis

Within the no-treatment group, 0/3 cows were cured, four cows lost a quarter and one cow was sold/died. Within the IMM Pirsue group, 0/3 cows were cured, one cow lost a quarter and no cows were sold/died. Within the IMM Pirsue plus Polyflex group, 0/3 cows were cured and no cows lost a quarter, or were sold/died.

Research is ongoing and final results are expected by June. Data reported here are preliminary. And final results will be reported during our presentation at the conference.

Significance

Effective and practical treatment strategies for gram-positive mastitis are essential to eliminating chronic mastitis cows and high bulk-tank somatic cell counts. Treatment with systemic ampicillin in conjunction with IMM therapy proved more effective in eliminating strep species organisms from the mammary gland and kept more cows in production over the traditional IMM therapy. For the producer, this means more non-infected cows stay in the herd when systemic antimicrobial therapy is added to IMM therapy when treating strep mastitis. However, the same is not true for staph species or *S. aureus*. Systemic ampicillin did not improve cure rates with either staph species or *S. aureus*. Further investigation is needed to develop effective treatment strategies for staph species and *S. aureus* mastitis. Overall, this treatment option is only useful if the producer is willing to culture new mastitis cases and identify the cows that would benefit from systemic antimicrobial therapy. It is not economical, practical, nor justifiable to treat all cows with clinical mastitis with a systemic antibiotic. A producer must rely on culture-based treatment protocols as an effective and economical means to reduce mastitis in the overall herd.