A survey of veterinarians in six states in the US regarding their experience with nursing beef calf respiratory disease

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Introduction

Bovine respiratory disease (BRD) is the leading cause of death of nursing (preweaned) beef calves ≥ 3 weeks of age; however, little is known about BRD in this population. The objectives of this survey were to describe the characteristics of nursing calf BRD as observed by veterinarians in cow-calf practice and to describe their recommendations for treating and preventing the disease.

Materials and Methods

An on-line questionnaire was developed using a software program (Qualtrics). In August 2012, veterinarians who were members of AABP or the Academy of Veterinary Consultants (AVC) located in Georgia, Florida, and West Virginia (Eastern states) and Iowa, Kansas, and Nebraska (Plains states) were asked by e-mail to complete the questionnaire regarding events during the previous year. E-mail reminders were sent one and two weeks later. Descriptive statistics were calculated, and responses from the two regions were compared by the Fisher's Exact test (categorical variables) or Mann-Whitney test (continuous variables), with significance set at $P \leq 0.05$.

Results

Five hundred seventy-four (486 Plains and 88 Eastern) veterinarians were solicited to participate, of which 61 (10.6%; 52 [10.7%] Plains and 9 [10.2%] Eastern) returned responses suitable for inclusion. Mean ± SD number of cow-calf clients served by the respondent's practice was 156 ± 195 clients for Plains veterinarians and 74 ± 65 clients for Eastern veterinarians ($P=0.070$). The mean ± SD percentage of the respondent's time spent working with cow-calf producers was 49% ± 21% for Plains veterinarians and 31% ± 29% for Eastern veterinarians ($P=0.025$). Respondents reported that 18% of their cow-calf clients had BRD in nursing calves during the previous year and 5% of those clients had a nursing calf BRD incidence ≥ 5%, whereas 14% of those clients had at least one calf die from BRD. Sporadic cases of BRD in calves ≥ 3 months of age was the pattern of disease most commonly reported. During the recall period, 67% of respondents had submitted ear notches for BVDV testing, 25% of respondents had submitted nasopharyngeal swab specimens for viral or bacterial testing, and smaller numbers of respondents used other tests to diagnose infectious agents. At least 33% of respondents reported identifying *Mannheimia haemolytica*, *Pasteurella multocida*, *Mycoplasma bovis*, BRSV, or BVDV from calves with BRD. Eighty percent of respondents recommended or administered treatment for an outbreak of nursing calf BRD during the previous year, with > 50% of respondents reporting the use of tulathromycin, florfenicol, enrofloxacin, danofloxacin, or ceftiofur for BRD treatment. Recommendations made for BRD treatment included antimicrobial treatment of individual calves (92%), mass antibiotic treatment of all calves in a group (71%), nonsteroidal anti-inflammatory drug (NSAID) treatment of individual calves (59%), and mass NSAID treatment (4%). Over 50% of respondents recommended an intranasal (IN), intramuscular (IM), or subcutaneous administration of a viral respiratory vaccine to treat or control an outbreak of nursing calf BRD. From a list of possible risk factors for nursing calf BRD, at least 50% of respondents selected "weather", "inadequate colostrum consumption", "introducing new cattle", "failure to give nursing calves BRD vaccines", "failure to give cows BRD vaccines", "calf diarrhea in the herd", "vitamin/mineral deficiency for cows/calves", "protein/energy deficiency for cows/calves", "BVDV PI

cattle in the herd", and "calving cows and/or heifers in confinement" as contributing to nursing calf BRD. Eighty-seven percent of respondents recommended vaccination of nursing calves to prevent preweaning or postweaning BRD, or to treat or shorten the duration of nursing calf BRD outbreaks.

Significance

These results give insight into recommendations made by cow-calf practitioners to treat and prevent nursing calf BRD, and identify factors to evaluate in future studies to determine evidence-based methods to prevent the disease.