OUTBREAK OF WINTER DYSENTERY BY BOVINE CORONAVIRUS IN THE END OF BRAZILIAN SUMMER

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Winter dysentery (WD) is an acute diarrhea caused by bovine coronavirus (BCoV) that affects adult cattle during the winter with high morbidity and low mortality rates. Outbreaks of WD have been frequently reported during cold seasons that favor the viral particles stability and consequently higher viral load in the environment. The occurrence of WD in dairy herds results in economic losses caused directly by mortality of cows and indirectly by severe reduction in milk production. This study reports an outbreak of WD in a Brazilian dairy herd located in Sabaudia city, Paraná state, during the end of summer season, with an average temperature of 23°C. The entire herd of 90 animals (40 of these lactating cows), presented a sudden onset of watery and bloody diarrhea, which persisted for five days. One lactating cow died, and the milk production of the others significantly dropped. Fecal samples from five cows were collected and tested by RT-PCR for the presence of BCoV. RNA extraction was performed in liquid feces suspension (Alfieri, et al., 2006). Semi-nested PCR assay targeting the N gene was performed according Takiuchi et al. (2006). The products were analyzed by bromide stained agarose gel electrophoresis. BCoV amplicons were purified, sequenced, and molecular analysis performed in BioEdit. The five samples tested were positive at PCR assay and three amplicons were sequenced. The molecular analysis (454 nt of N gene) showed 100% of identity among the sequences, and 98.4% identity with the WD BCoV reference strain Kakegawa (GenBank accession number AB354579). As the five tested animals were shedding the virus and had clinical manifestation the possibility of individual susceptibility to virus infection was excluded. The clinical manifestation in 100% of the herd suggests high viral titers in the environment even at 23°C (end of summer). There are few studies associating the presence of BCoV as causative agent of diarrhea in adult cattle in Brazil, and most of them occurred during cold months, like most of the studies reported in other countries with well defined seasons. This report reinforces the involvement of BCoV in the etiology of diarrhea outbreaks in adult cattle even during the warmer seasons of tropical areas.

Keywords: Dairy herd, winter dysentery, bovine coronavirus

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