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Management of bacterial neonatal diarrhea in calves

Manejo de diarreias neonatais de causa bacteriana em bezerros

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ABSTRACT

Diseases such as neonatal diarrhea are common in poorly managed herds and can cause great losses in any cattle breeding system in the world, especially in intensive systems, being responsible for 2% of losses in the herd. As soon as the calf is born, it is exposed to numerous factors, such as agents, host and environment, which, together, can favor the emergence of this disease, because, due to the reproductive characteristic of the bovine female, there is no transfer of transplacental immunity to the neonate.

Keywords: Neonatal diarrhea, Calves, Bacteria.

INTRODUCTION

Diseases such as neonatal diarrhea are common in poorly managed herds and can cause great losses in any cattle breeding system in the world, especially in intensive systems, being responsible for 2% of losses in the herd. As soon as the calf is born, it is exposed to numerous factors, such as agents, host and environment, which, together, can favor the emergence of this disease, because, due to the reproductive characteristic of the bovine female, there is no transfer of transplacental immunity to the neonate. During the lactation phase, the calf is more susceptible to developing this syndrome and due to its wide etiology, it makes treatment difficult, resulting in numerous losses to the property. The present study will address a brief review of neonatal diarrhea caused by bacteria, responsible for one of the most frequent causes of mortality and morbidity in newborn calves.

DEVELOPMENT

Bacterial neonatal diarrhea is characterized as a syndrome, and can be caused by two main bacteria, *Salmonella spp* and *Escherichia coli*, and there are also cases of *Clostridium*, affecting animals up to 15 days of age. However, bacteria can be linked to other agents such as

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viruses and parasites, intensifying the symptoms of the disease, for these reasons management in the lactation phase is essential.

Some management factors may help to prevent neonatal diarrhea from occurring on the farm, such as the nutritional status of the calf, population density of the herd, periodic sanitary management, including cleaning of bottles and the environment. Colostration is a fundamental step for the transfer of immunity to the calf, however, it must be done in the first hours of life, with quality that meets the nutritional needs of the neonate, which, provided properly and linked to the management mentioned above, reduces the incidence of diarrhea.

The disease encompasses bacterial toxins, inflammation and atrophy of the intestinal villi and destruction of erythrocytes, such conditions cause intestinal hypersecretion, consequently poor digestion and absorption of food. As it is an acute manifestation, the losses in the gastrointestinal tract are widespread, and in more severe cases can lead to a loss of up to 18% of body weight in 24 hours, mainly increasing the dehydration condition, if there is no therapeutic input. In some cases, the appearance of the stool may be suggestive of *Escherichia coli*, characterized by whitish diarrhea, while in the presence of *Salmonella spp*, the stool may be more fluid with the presence of mucus. In addition to these manifestations, other clinical signs may also occur, such as apathy, loss of appetite, progressive weight loss and dehydration.

Management includes, in addition to colostration, cleaning and disinfection of bottles, fly control, a heated environment, water and food suitable for calves. It is preferable to offer separate stalls to calves, to avoid cross-contamination, and it is essential to periodically clean the pens and, if possible, to create a sanitary vacuum between batches of animals. In the event of the appearance of diarrhea, isolate calves with symptoms and disinfect the environment where they were. Preventive management may include vaccination of pregnant cows, so that there is production of immunoglobulins, which will be transferred via colostrum in addition to the provision of a clean and disinfected place for calving. The vaccine is a compilation that prevents bovine rotavirus, bovine coronavirus, strains of *Escherichia coli* and *Clostridium perfringens*.

Before starting a treatment protocol, it is important to collect the stool for bacterial culture, thus identifying the causative agent of the diarrhea, and then being able to determine which antibiotic to use. It is still essential to promote supportive treatment, through electrolyte replacement and hydration of the calf with oral or parenteral fluid therapy. Ideally, the milk supply should not be suspended, so that the animal remains nourished.

CONCLUSION

It is concluded that the management of calves at the beginning of life is essential to ensure a healthy herd. Prevention is an effective and appropriate way to avoid the disease. The set of several factors, such as previous management of pre-calving cows, care in the first hours of life, along with hygiene, are essential to maintain adequate sanitary parameters.

It is noteworthy that it is important to identify the etiological agent that is affecting the neonates, enabling the realization of a more assertive therapeutic support, reducing the damage caused by the syndrome and consequently mitigating the losses in the property.

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