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Management and treatment of PPR Outbreak in Goat: A Case Report

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A B S T R A C T

An outbreak of *peste des petits ruminants* (PPR) had occurred in Khanapara area of Guwahati district, Assam. A total of 25 numbers of goats were found to be affected with PPR revealing characteristic signs of respiratory distress, high fever, anorexia, diarrhoea, abdominal cramps, reluctance to move and so forth. Extremely high rate of morbidity (100%) was recorded in the affected animals. Following prompt treatment, the mortality rate was reduced to 12.5% with complete recovery being observed in 7 days time. The present study attempts to provide fresh insights into the various effective treatment protocols that are available and also the preventive measures that must be put in place to curb PPR outbreak.

Introduction

Goat farming has been an age old practice in our country and continues to evolve by the day (Kumar, 2007). People of Indus Valley civilization (3300–1300 BC) were familiar with goats in addition to other domestic and wild animals of today (Bhat, 2017). In *Rigveda* goats were mentioned and kept by Aryans for milk. In the *Arthashastra*, goat has been described as an important animal for milk (Kumar *et al*., 2015). Goat rearing plays a pivotal role in socio-economic development of rural households and rightly referred as *Poor man's Cow* owing to its multi-dimensional use as meat, milch and wool/fibre animal (Arguello, 2011; Sapkota *et al.*, 2017; Dossa *et al.*, 2015). Goats are afflicted with a plethora of infectious diseases which can have severe ramifications on their growth and productivity (Nath *et al.*, 2014). PPR is acommon viral disease of small ruminants, widespread in distribution (Fentahun *et al*., 2012) and is closely related to the Rinderpest virus, a devastating disease of cattle (Bello *et al*., 2016). The incubation period of the disease is 3-6 days, and is characterized by high fever, oculonasal discharges, pneumonia, stomatitis, and inflammation of gastrointestinal tract leading to severe diarrhoea followed by death or recovery (Balamurugan *et al*., 2014; Sen *et al*., 2010; Zahur *et al*., 2008). At present, PPR is enzootic in India and outbreaks tend to occur regularly among small ruminants throughout the country, causing significant economic loss in terms of morbidity, mortality, and loss of productivity due to trade restriction (Kerur *et al.*, 2008; Raghavendra *et al*., 2008). However, only a systematic study of PPRV infection has been performed in small ruminants

from India (Singh *et al*., 2006). Even though vaccination is available against PPR, it has not yet received the coverage that it requires. However, supportive therapy in the form of rehydration through infusion of fluids, antibiotic therapy coupled with anti histaminic has been largely successful in the control of the disease (Chakrabarti, 2003). In this paper, attempt has been made to shed light on some of the effective treatment measures that are available and how it is important to ensure prompt and timely treatment to obtain effective results.

Materials and Methods

History: A case study: A herd consisting of 4 pregnant doe, 2 lactating doe, 3 castrated male and 6 kids were brought to the teaching veterinary clinical complex, C.V.Sc., Khanapara with complaintsof fever, severe bloody diarrhoea, oculo-nasal discharge, sudden loss of appetite, ulcerated lesions on oral cavity (Fig. 1 and 2), eyes and nostrils, dehydration, depression, excessive bleating at night, reluctance to move, droopy head and pasty eyes. The animals were not vaccinated as per the information obtained from the owner. Based on history and clinical examination serum samples were collected from the affected 7 individuals (3 pregnant, 2 castrated males and 2 kids). The same samples were sent to the North Eastern Regional Disease Diagnostic Laboratory (NERDDL) Assam. All the samples are found to be positive for PPR.

Results and Discussion

Treatment was initiated for a period of 7 days with Metronidazole@10mg/kg body weight I/V once daily to surmount the protozoal load in the intestine and alleviate signs of diarrhoea.

A course of third generation cephalosporin (Ceftriaxone and sulbactum) at the rate of 7.5 mg/Kg body weight was given I/V to overcome respiratory infection. Similar studies have shown that cephalosporin antibiotics are effective in the treatment of PPR (Kumar *et al*., 2015). Levamisole at the rate of 2.5mg/kg body weight subcutaneously was given to boost immunity in the affected animals. Perusal of literature point towards an increasing effectiveness of Levamisole in the treatment of PPR and have been shown to boost immunity in the affected animals (Das *et al*., 2016). Adequate rehydration was also done with normal saline.

The owner was advised to keep the animals at a dry place with regular washing of the mouth having ulcerated lesions with $KMnO_4$ and Boroglycerinelotion.

An injection of gentamicin and dexamethasone was given subconjuctivally to overcome infection in the eyes. Following prompt treatment, it was observed that the mortality rate of the PPR affected goats had significantly reduced to a low of 12% (Fig. 3). The symptoms had resolved by the end of first week of treatment. This current observation is testimony to the fact that prompt and effective treatment in PPR cases can significantly improve the chances of survival.

Fig.1 and 2 Ulcerative lesion on mouth and nostrils

Fig: 1 Fig: 2

Fig.3 PPR affected goat

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