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**Pooja Prajapat**

Veterinary Officer,

Department of Animal

Husbandry, Government of

Rajasthan, Rajasthan, India

## Management and treatment of Peste Des Petits Ruminants (PPR) in goat in field conditions-case report

**Pooja Prajapat**

### Abstract

A group of 12 does, 2 buck and 8 kids was diagnosed with infection of peste des petits ruminants (PPR) in Kakkoo village of Nokha tehsil in Bikaner district of Rajasthan. The affected animals exhibited signs of dehydration, depression, excessive bleating at night, reluctance to move, droopy head, and pasty eyes. After diagnosis treatment was started and complete recovery was observed after 7 days of treatment. This study underscores the significance of early diagnosis and comprehensive treatment strategies in managing PPR in goat. Effective control measures, including medications, supportive care, and vaccination, play pivotal roles in mitigating the impact of this devastating disease.

**Keywords:** Treatment, Peste Des Petits Ruminants (PPR), goat

### Introduction

Goat rearing is vital for socioeconomic development of rural households and therefore, called as *Poor man's Cow* because of its multipurpose use as meat, milch and wool/fibre animal (Arguello, 2011; Dossa *et al.*, 2015; Sapkota *et al.*, 2017) <sup>[1, 7, 12]</sup>. Goat can suffer from numerous infectious diseases, and these ailments can significantly impact their growth and productivity (Nath *et al.*, 2014) <sup>[11]</sup>. Peste des Petits Ruminants (PPR) is a viral disease affecting sheep and goat, causing significant economic losses and posing a threat to global food security (Shaila *et al.*, 1996) <sup>[14]</sup>. The disease has an incubation period of 3-6 days and is marked by elevated fever, oculonasal discharges, pneumonia, stomatitis, and inflammation of the gastrointestinal tract. This progression often leads to severe diarrhoea, ultimately resulting in either death or recovery, as documented by Balamurugan *et al.* (2014) <sup>[2]</sup>, Sen *et al.* (2010) <sup>[13]</sup>, and Zahur *et al.* (2008) <sup>[15]</sup>. Despite the availability of vaccination against PPR, it has not received the necessary coverage. Nevertheless, successful control of the disease has been achieved through supportive therapy, involving rehydration via fluid infusion and a combination of antibiotic therapy and antihistamines (Chakrabarty, 2003) <sup>[4]</sup>. This study presents a recent cases of PPR in goat, underscoring the significance of early diagnosis and implementation of multidimensional treatment strategies.

### Materials and Methods

#### History: A case study

A group comprising 12 does, 2 buck, and 8 kids was brought to the Government Veterinary Hospital, Kakkoo, Nokha, Bikaner, presenting symptoms such as fever, nasal and ocular discharge, coughing, and erosive lesions on the oral mucosa. (Fig. 1, 2, 3 and 4). The animals also exhibited signs of dehydration, depression, excessive bleating at night, reluctance to move, droopy head, and pasty eyes. The severity of symptoms varied among individuals, emphasizing the urgency of intervention (Muniraju *et al.*, 2014) <sup>[10]</sup>. Notably, the animals had not been vaccinated, according to information provided by the owner. Based on the history and clinical examination, the animals were diagnosed with an infection caused by the PPR virus.

### Results and Discussion

Treatment was initiated for a duration of 7 days, involving the intravenous administration of Metronidazole at a dosage of 10 mg/kg body weight once daily. This approach aimed to combat the protozoal load in the gut and reduce signs of diarrhoea.

**Corresponding Author:**

**Pooja Prajapat**

Veterinary Officer,

Department of Animal

Husbandry, Government of

Rajasthan, Rajasthan, India

Simultaneously, a course of third-generation cephalosporin (Ceftriaxone) was administered intravenously at a rate of 7.5mg/kg body weight to alleviate respiratory infection. The effectiveness of cephalosporin antibiotics in PPR treatment is also reported by (Baruti *et al.*, 2018 and Kumar *et al.*, 2015) [3, 8].

To improve immunity in the affected animals, Levamisole was administered subcutaneously at a rate of 2.5mg/kg body weight. Literature supports the increasing effectiveness of Levamisole in PPR treatment and its ability to enhance immunity in affected animals (Das *et al.*, 2016) [5]. Adequate rehydration was ensured through the use of normal saline.



**Fig 1:** Goat infected with PPR showing nasal discharge



**Fig 2:** Goat infected with PPR showing oral lesions



**Fig 3:** Goat infected with PPR showing ocular discharge



**Fig 4:** Goat infected with PPR showing erosive lesion of oral mucosa

The owner received advice to house the animals in a dry place, with regular washing of the mouth containing ulcerated lesions using  $\text{KMnO}_4$ . A subconjunctival injection of gentamicin and dexamethasone was administered to resolve eye infections. By the end of the first week of treatment, symptoms had resolved. This observation underscores the importance of timely and effective treatment in PPR cases, significantly improving the chances of survival.

#### Management and Control Measures

Strict quarantine measures were implemented to contain the outbreak, following established protocols (Dhar *et al.*, 2002) [6]. Infected animals were isolated, and biosecurity measures were reinforced to prevent the introduction of the virus into neighbouring flocks. Comprehensive surveillance was established to monitor the efficacy of treatment and assess the overall health of the flock (Kwiatk *et al.*, 2007) [9].

#### Conclusion

This study underscores the significance of early diagnosis and comprehensive treatment strategies in managing PPR in goat. Effective control measures, including medications, supportive care, and vaccination, play pivotal roles in mitigating the impact of this devastating disease.

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