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Research Article

Prevalence of Peste des Petits Ruminants in Goat at Upizalla Veterinary Hospital, Pirojpur Sadar, Bangladesh

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ABSTRACT

Objective: The study was conducted to determine the prevalence of Peste des Petits Ruminants in different breed of goats based on age, sex, seasonal variation and vaccination status at Upazilla Veterinary Hospital, Pirojpur Sadar, Bangladesh during the period from January 2015 to December 2015.

Materials and Methods: A total of 319 cases of different breed of goats were recorded in which 43 (13.48%) were infected by Peste des Petits Ruminants. The diagnosis of Peste des Petits Ruminants was performed based on clinical history, clinical signs and some laboratory techniques. The major clinical signs were high fever, nasal discharge, rapid breathing, mouth lesions and bloody diarrhea.

Results: The prevalence was highest in Black Bengal goat (6.90%) compare to Jamunapari (3.76%) and crossbreds (2.82%). Female goats were more susceptible (60.47%) than the male goats (39.53%). 5 months to 11 months aged goats showed highest prevalence (48.84%) followed by 1 to 3 years aged goats (27.91%) and 0 to 4 months aged goats (23.26%). In winter season, the prevalence was highest (55.81%) compare to summer (25.58%) and rainy season (18.60%). The non-vaccinated goats were more susceptible (90.91%) than the vaccinated goats (9.09%).

Conclusion: Those prevalence of Peste des Petits Ruminants in different breed of goats based on age, sex, seasons and vaccination will help clinician to know the occurrence of Peste des Petits Ruminants in this area and will help them to take proper preventive measures.

Keywords: Prevalence, Peste des Petits Ruminants, Upazilla Veterinary Hospital, goats

INTRODUCTION

Goat is considered as the natural resource in Bangladesh. There are about 21.6 million goats distributed throughout the country (FAO, 2010; BER, 2012). The rural poor and landless people especially women engaged themselves to rear goats (Chowdhury, 2002). Most of the goats reared are Black Bengal, Jamunapari and some other Crossbreds. They contribute to the development of livelihood and food security as well (Akteruzzaman, 2008; Rana, 2015). Sometimes they are affected by different infectious (Peste des Petits Ruminants, goat pox, anthrax, caseous lymphadenitis, brucellosis,mastitis etc) and non-infectious diseases (vaginal prolapsed, mite infection, ketosis etc). Those act as a favorable hindrance in the development of livelihood (Hoque and Samad 1997). Peste des Petits Ruminants is one of the common viral infectious diseases in different breeds of goats in Bangladesh with high mortality. It is caused by Peste des Petits Ruminants virus under the morbilli virus group of the paramyxoviridae family and affects both digestive and respiratory system which is characterized by high fever, nasal discharge, rapid breathing, mouth lesions and bloody diarrhea (Islam et al., 2001). A veterinary hospital represented and recorded all infectious and non-infectious diseases of livestock animals in a particular area. Nowadays, the infectious disease, Peste des Petits Ruminants in different breeds of goats is more common in Upazilla Veterinary Hospital, Pirojpur Sadar, Bangladesh. Several studies were carried out on the prevalence of Peste des Petits Ruminants in different breeds of goats in different areas of Bangladesh (Rahaman et al., 2017; Islam et al., 2001; Sil, 2000); but no study was undertaken at Pirojpur Sadar, Bangladesh. Here the study is planned to determine the prevalence of Peste des Petits Ruminants in different breeds of goats according to the goat's age, sex, seasonal variation and vaccination status in this area.

MATERIALS AND METHODS

Study area and duration:

The study was conducted at Upazilla Veterinary Hospital, Pirojpur Sadar, Bangladesh from January 2015 to December 2015. Laboratory techniques for confirmatory diagnosis of Peste des Petits Ruminants in different breeds of goats were performed at the laboratory of Upazilla Veterinary Hospital, Pirojpur Sadar, Bangladesh.

Study population:

A total of 319 infectious and non-infectious cases of different breeds of goats were recorded, in which 43 goats from different breeds were infected by Peste des Petits Ruminants.

Diagnosis of diseases:

Peste des Petits Ruminants of different breeds of goats were diagnosed mainly based on the clinical history, clinical sings and physical examination. Differential diagnosis from other diseases (like parasitic infestation, diarrhea, pneumonia etc) represents some common clinical signs were performed by some laboratory techniques at the laboratory of Upazilla Veterinary Hospital, Pirojpur Sadar, Bangladesh.

Data processing and Prevalence calculation:

Infectious and non-infectious cases were 177, 66 and 76 in Black Bengal goats, Crossbreds and Jamunapari, respectively. There were 43 Peste des Petits Ruminants affected cases including 22 Black Bengal goats, 9 Crossbreds and 12 Jamunapari goats. Each breed of goats was divided according to sex (male, female), age (0-4 months, 5-11 months, 1-3 years age), seasonal variation (Summer season- March to June, Rainy season- July to September, Winter season- November to February) and vaccination status (Vaccinated goats, Non-vaccinated goats). All the data were calculated with the help of MS Excel 2010, STATA SE 13 to determine the prevalence of Peste des Petits Ruminants in different breed of goats according to the goat's age, sex, seasonal variation and vaccination status.

RESULTS AND DISCUSSION

Prevalence of Peste des Petits Ruminants in different breed of goats according to the goat's age, sex, seasonal variation and vaccination status:

The prevalence of Peste des Petits Ruminants in different breed of goats according to the goat's age, sex, seasonal variation and vaccination status is given bellow (Table 1)

The prevalence of Peste des Petits Ruminants in different breeds of goats was 13.48% with the highest prevalence in Black Bengal goats (6.90%) compared to Jamunapari goats (3.76%) and Crossbreds goats (2.82%). Those findings were similar with the findings of Rahman et al., (2017); Samad, (2001).

Black Bengal Goats:

In black Bengal goats, the prevalence was highest in female goats (59.09%) than males (40.91%) as presented in Table 1. This finding was similar with the findings of Samad, (2001); Islam et al., (2001). 5 months to 1 year aged Black Bengal goats (young) showed highest prevalence (45.45%) followed by 1 to 3 years (older) aged goats (31.82%) and 0 to 5 months old goats (22.73%). This result was supported by

Breed of goat		Male	Female	0 – 4 months age	5 - 11 months age	1 – 3 years age	Summer season	Rainy season	Winter season	Vaccinated goats	Non-vaccinated goats
Total case **(319)**	Total PPR **(43) 13.48%**	**17+26 = 43**		**10+21+12= 43**			**11+8+24= 43**			**5+38= 43**	
		17 (39.53%)	**26 (60.47%)**	**10 (23.26%)**	**21 (48.84%)**	**12 (27.91%)**	**11 (25.58%)**	**8 (18.60%)**	**24 (55.81%)**	**5 (11.63%)**	**38 (88.37%)**
Black Bengal (177)	**22 (6.90%)**	9 (40.91%)	13 (59.09%)	5 (22.73%)	10 (45.45%)	7 (31.82%)	5 (22.73%)	4 (18.18%)	13 (59.09%)	2 (9.09%)	20 (90.91%)
Crossbreds (66)	**9 (2.82%)**	3 (33.33%)	6 (66.67%)	2 (22.22%)	4 (44.44%)	3 (33.33%)	3 (33.33%)	2 (22.22%)	4 (44.44%)	1 (11.11%)	8 (88.89%)
Jamunapari (76)	**12 (3.76%)**	5 (41.66%)	7 (58.33%)	3 (25.00%)	7 (58.33%)	2 (16.67%)	3 (25.00%)	2 (16.67%)	7 (58.33%)	2 (16.67%)	10 (83.33%)
319	43	17	26	10	21	12	11	8	24	5	38

Table 1: Prevalence of Peste des Petits Ruminants in different breed of goats according to the goat's age, sex, seasonal variation and vaccination status

earlier report of Blood et al., (1995); Islam et al.,

(2001). In winter season, the prevalence was highest (59.09%) compared to summer season (22.73%) and rainy season (18.18%). The non-vaccinated goats showed highest prevalence (90.91%) than vaccinated goats (9.09%), which was supported by the studies of Rahman et al., (2017); Gibbs et al., (1979).

Crossbreds goats:

In crossbred goats, the prevalence was highest in female goats (66.67%) than males (33.33%) as presented in Table 1. This finding was similar with the findings of Rahman (2017); Islam et al., (2001). In 5 months to 1 year aged Crossbred goats (young) showed highest prevalence (44.44%) compared to 1 to 3 years (older) aged goats (33.33%) and 0 to 5 months old goats (22.22%). In winter season, the prevalence was highest (44.44%) followed by summer season (33.33%) and rainy season (22.22%). The non-vaccinated goats showed highest prevalence (88.89%) than vaccinated goats (11.11%), which was supported by the studies of Rahman et al., (2017); Samad, (2001).

Jamunapari goats:

In Jamunapari goats, the prevalence was highest in female goats (58.33%) than males (41.66%) in as presented Table 1. This finding was similar with the findings of Rahman et al., (2017); Samad, (2001). In 5 months to 1-year old Jamunapari goats (young) showed highest prevalence (58.33%) followed by 0 to 5 months (25.00%) and 1 to 3 years (older) old goats (16.67%). This result was almost similar with earlier results of Rahman et al., (2017); Blood et al., (1995); Islam et al., (2001). In winter season, the prevalence was highest (58.33%) compared to summer season (25.00%) and rainy season (16.67%). The non-vaccinated goats showed highest prevalence (83.33%) than vaccinated goats (16.67%), which was supported by the studies of Rahman et al., (2017); Gibbs et al., (1979); Samad, (2001).

Conclusion:

Peste des Petits Ruminants is one of the common viral infectious diseases in different breeds of goats in Bangladesh with high mortality. Black Bengal goats were more susceptible compared to Jamunapari goats and Crossbreds goats. The prevalence of Peste des Petits Ruminants of goats varied with sex, age, seasonal variation and vaccination status. Here, the study provides the preliminary knowledge to clinician about the occurrences of Peste des Petits Ruminants in different breeds of goats at Upazilla Veterinary Hospital, Pirojpur Sadar, Bangladesh so that they can take proper preventive measures against this disease in this area.

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Authors' Contribution:

Sonnet Poddar, collected data and wrote manuscript, Tuli Dey, analyzed data, planned and formatted manuscript. Jabin Sultana, Salma Akter and Md.Alauddin helped in writing the manuscript.

Conflict of interest:

All authors declared that there is o conflict of interest

regarding this study.

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