Article

Prevalence of clinical diseases and disorders in goats at Jhenaidah Sadar Upazila, Jhenaidah, Bangladesh

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Abstract: The study was conducted to determine the prevalence of clinical diseases and disorders in goats at Jhenaidah Sadar upazilla, Jhenaidah, Bangladesh. A total of 120 sick goats were examined during the period from September to November, 2015. The presumptive diagnosis of the diseases was performed on the basis of history, owner's complaints, clinical findings and physical examination of patients. Among the diseases and disorders, parasitic infestation 34 (28.33%) case were highest in all cases. On the other hand, non specific fever 25 (20.83%), anorexia 14 (11.67%), peste des petits ruminants (PPR) 10 (8.33%), Gid disease 3 (2.5%), Diarrhea 5(4.17%), Myiasis wound 7(5.83%), Bloat 4(3.33%), Navel ill 2(1.67%), Pneumonia 7(5.83%), Vitamin and mineral deficiency 4(3.33%) and Dystocia 5(4.17%) were also recorded. It was also reported that adult (62.5%), female (66.67%) and Black Bengal goats (89.16%) were showed more susceptible to diseases than young (37.5%), male (33.33%) and Jamunapari (10.83%) goats. These results of the study might be helpful to develop effective prevention and control strategies against diseases and disorders in goats.

1. Introduction

Bangladesh is an agricultural country where crop, fisheries, livestock and forest are the important subsector of agriculture and plays an important role in national economy. Livestock sub sector contributes around 14.21% in agricultural sector and 3.21% in national GDP (DLS, 2015-16). In Bangladesh, more than 10 million people directly depend on this sector for their livelihood improvement (Karim *et al.,* 2010). Livestock rearing is an important part of mixed farming system commonly practiced in our land from ancient times. Most of the animals in rural areas are reared under smallholder traditional management system. The peoples in Bangladesh usually rearing cattle, buffalo, goat and sheep as domestic livestock. Livestock constitutes the important part of human life. Many people used these animals as draft power and leather purpose from very early time. It also provides manure, meat and milk to the vast majority of the people. There are about 25.76 million goats exist in our country (DLS, 2015-16), which is known as "poor man's" cow. It plays a vital role in rural economy and helps to alleviate poverty of poor people. The poor peoples of Bangladesh usually rear goats with very little capital investment. According to previous study it has been known that probably goats were the first domesticated species of animals and most of the Black Bengal goats (around 90%) were reared for their good traits (Amin *et al*., 2001). Most of the goats in our country are weak, emaciated and less productive due to malnutrition and different diseases. Veterinary hospital is an ideal and reliable source of information for animal diseases and their therapeutic management. Analysis of the case records include incidence, prevalence, frequency, distribution and determinants or risk factors of the diseases in an area is necessary for taking efficient control program. A number of studies have already been undertaken in different parts of the country to

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determine the occurrence of diseases and disorders in ruminants (Samad, 2001; Samad *et al.*, 2002; Rahman *et al.*, 2012). To best of my knowledge, there are very few published data available on the occurrences of disease and disorders in goat at Jhenaidah Sadar Upazila, Jhenaidah, Bangladesh. So, the objectives of this study were to find out the overall prevalence of diseases and disorders in goat at Upazila Livestock Office, Jhenaidah Sadar, Jhenaidah, Bangladesh. The variations of age, sex and breed on the prevalence of diseases and disorders in goat at study area were also investigated.

2. Materials and Methods
The study was conducted to find out the prevalence of clinical diseases and disorders in goats at Jhenaidah Sadar Upazila, Jhenaidah, Bangladesh. A total of 120 animals were brought to the Upazila Livestock Office from different areas of Jhenaidah Sadar during the period from September to November, 2015. It has been recorded prevalence of infectious diseases in animals was higher in autumn as compared to other seasons of the year (Gunnarsson *et al.,* 2012). All information of goats include age, sex, breed, body weight etc. were recorded before clinical examination. The presumptive diagnosis of different diseases and disorders were performed on the basis of owner's complaints, anamnesis, clinical examination and clinical findings.

2.1. Owner's complaints
Complaints of the owner or attendant of patients were also considered before clinical examination.

2.2. Anamnesis
Information on diseased goats was recorded by carefully asking questions to the owner, farmer or attendant of animals. Sometimes owner or attendants of animals hide the authentic information of sick animals; in that case cross questioning was preferred during animal examination (Chakrabarti, 2002).

2.3. General examination
Animals were examined visually the body condition, posture, gait, salivation, nasal discharge, abdominal distension, urination, defecation etc.

2.4. Physical examination
Physical examination of different body parts or organ of diseased animals were examined by physical and special examination techniques such as palpation, percussion, auscultation, modified techniques of common special examination, needle exploration, walking of the animals, extension and flexion of limbs etc. (Radostits *et al.*, 2007).

2.5. Clinical examination
Clinical examinations of all goats were conducted on the basis of owner's complaints, history, clinical findings as well as physical and clinical examination techniques to diagnose the clinical diseases and disorders.

2.6. Experimental design
The entire goat was grouped according to their age, sex and breed. In case of age, less than six months as kid and more than six months as adult group. In relation to sex and breed, the goats were also sorted as male and female; Black Bengal goat and Jamunapari, respectively.

3. Results and Discussion
A total of 12 diseases and disorders (parasitic infestation, non-specific fever, anorexia, PPR, dystocia, pneumonia, vitamin and mineral deficiency, wound, tympany, gid disease, navel ill, diarrhea) were recorded in goats which were brought to the Upazila Livestock Office for their treatment during the study period.

3.1. Overall prevalence of diseases and disorders in goats
The overall prevalence of diseases and disorders in goats include parasitic infestation, non-specific fever, anorexia, peste des petits ruminants (PPR), dystocia, pneumonia, vitamin and mineral deficiency, myiasis wound, bloat, gid disease, navel ill, and diarrhea were 28.33, 20.83, 11.67, 8.33, 4.17, 5.83, 3.33, 5.83, 3.33, 2.5, 1.67 and 4.17% respectively (Table 1).
Among the disease and disorders, the highest percentage of case was recorded with parasitic infestation (28.33%), followed by non-specific fever (20.83%), anorexia (11.67%) and so on. It has been reported that overall prevalence of gastrointestinal helminthes in goat was 63.41% (Hasan *et al.,* 2011) and 60.71% (Rahman *et al.,* 2014), which is lower than the recorded study. In our study we found that prevalence of anorexia in goat was 11.67%, which is slightly higher than the earlier several reports by Alam *et al.* (2015), Karim *et al.* (2014)

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and Kabir *et al*. (2010) as 4.51%, 7.4% and 6.09% respectively. Comparatively higher percentage of anorexia may be recorded due to infection in goats with other systemic and infectious diseases and disorders.

Occurrence of PPR in our performed study was 8.33%, which is less than the aforementioned report by Sarker and Islam (2011); Singh *et al*. (2004) as 20.57%, 32.4% respectively. The recorded data is more or less similar and supported by Rahman *et al*. (2012) who reported 5.2% PPR in goat. The variation in prevalence of infectious diseases of animals due to geographical, environmental and demographic factors of study area (Iman and Abou, 2015). Dystocia is an important obstetrical disease in goat. In our study, dystocia was found 4.17%. Lucky *et al*. (2016) reported 12.5% dystocia in goats which is lower than recorded study. Khaled *et al*. (2008) reported bacterial pneumonia 6.6% and verminous pneumonia 4.7%, which support our reported study as 5.8%. Our present study also depicted the prevalence of diarrhea 4.17%, which is slightly lower than (7.17%) by Alam *et al*. (2015). This study revealed the 3.33% bloat in goats (Table 1). Samad (2001) reported 3.98% bloat in goat which is similar to our study. Prevalence of bloat also was recorded 2.5% by Rahman *et al*. (2012) and 2.87% by Alam *et al*. (2015). The clinical cases of gid disease was recorded by Alam *et al*. (2015) who reported 0.41% and Karim *et al*. (2014) also reported 5.6% in goat.

Myiasis wound was recorded 5.83% in our study. Alam *et al*. (2015) revealed that 2.05% goats affected with myiasis wound. Rahman *et al*. (2012) also reported myiasis wound in goat as 16.4%, which was higher than our present finding. Navel ill infection in goat was recorded in 1.67% goat. The occurrence of navel ill infection supports the earlier report by Alam *et al*. (2015) who reported 1.45% navel ill infection in kids. Vitamin and mineral deficiency was recorded 3.33% in goats (Table 1).

3.2. Age wise prevalence of diseases and disorders in goat

Goats were categorized as young and adult. In our present study showed that prevalence of clinical diseases and disorders were comparatively higher in adult animals (62.46%) than young (37.47%) (Table 2), which was agreed by Parvez *et al*. (2014) and Alam *et al*. (2015). The prevalence of clinical diseases higher in old and adult animal than young animals due to lower disease resistance capacity (Parvez *et al*., 2014).

Samad (2001) recorded the navel ill infection in kids, which is consistent to our finding. Prevalence of pneumonia was higher in young goats than in adults by Momin *et al*. (2014); this finding inclined to our study. Young goats are more susceptible to PPR than adult (Rahman *et al*., 2011; Islam *et al*., 2012). Our present study also detected comparatively higher prevalence of PPR in young goats than in adult.

3.3 Sex wise prevalence of diseases and disorders in goat

Prevalence of clinical diseases and disorders in relation with their sex revealed that affected rate in female (66.67%) were higher than male goats (33.33%) (Table 3). The present study was agreed by Kabir *et al*. (2010), who observed that clinical diseases of goat were higher in female (60%) than male (40%). Parvez *et al*. (2014) also reported highest prevalence of the clinical diseases and disorders in female (61.63%).

3.4. Breed wise prevalence of diseases and disorders in goat

The diseases and disorders in goats according to their breed reported that Black Bengal goat (89.16%) were highly susceptible followed by Jamunapari (10.83%) (Table 4). Because, Black Bengal population was higher than Jamunapri goat in study area. It has also been recorded previously the Black Bengal goat farming was commonly practiced than Jamunapari goat in Bangladesh (Chowdhury *et al*., 2014).

Table 1. Overall prevalence of diseases and disorders in goat.

Diseases and disorders	Percentage of diseases (%)
Parasitic infestation	34 (28.33%)
Non-specific fever	25 (20.83%)
Anorexia	14 (11.67%)
PPR	10 (8.33%)
Gid Disease	3 (2.5%)
Diarrhea	5 (4.17%)
Myiasis wound	7 (5.83%)
Bloat	4 (3.33%)
Navel ill	2 (1.67%)
Pneumonia	7 (5.83%)
Vitamin and mineral deficiency	4 (3.33%)
Dystocia	5 (4.17%)
Total	**120 (100%)**

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Table 2. Age wise prevalence of diseases and disorders in goat.

Diseases and disorders	Goat	
	<6 month (young)	>6 month (adult)
Parasitic infestation	10 (8.33%)	24 (19.99%)
Non-specific fever	10 (8.33%)	15 (12.49%)
Anorexia	4 (3.33%)	10 (8.33%)
PPR	10 (8.33%)	0(0.00%)
Gid Disease	0 (0.00%)	3 (2.50%)
Diarrhea	2 (1.66%)	3 (2.50%)
Myiasis wound	0 (0.00%)	7 (5.83%)
Bloat	0(0.00%)	4 (3.33%)
Navel ill	2 (1.66%)	0 (0.00%)
Pneumonia	5 (4.16%)	2 (1.66%)
Vitamin and mineral deficiency	2 (1.66%)	2 (1.66%)
Dystocia	0 (0.00%)	5 (4.17%)
	45(37.47%)	75(62.46)
Total	**120 (100%)**	

Table 3. Sex wise prevalence of diseases and disorders in goat.

Diseases and disorders	Goat	
	Male	Female
Parasitic infestation	10 (8.33%)	24 (19.99%)
Non-specific fever	10 (8.33%)	15 (12.49%)
Anorexia	4 (3.33%)	10 (8.33%)
PPR	0(0.00%)	10 (8.33%)
Gid Disease	0 (0.00%)	3 (2.5%)
Diarrhea	2 (1.66%)	3 (2.50%)
Myiasis wound	0 (0.00%)	7 (5.83%)
Bloat	0 (0.00%)	4 (3.33%)
Navel ill	2 (1.67%)	0 (0.00%)
Pneumonia	5 (4.16%)	2 (1.66%)
Vitamin and mineral deficiency	2 (1.66%)	2 (1.66%)
Dystocia	0 (0.00%)	5 (4.17%)
	35 (29.14%)	85 (70.79%)
Total	**120 (100%)**	

Table 4. Breed wise prevalence of diseases and disorders in goat.

Breed	Total Animal	Percentage of diseases (%)
Black Bengal goat	107	89.16
Jamunapari	13	10.83
Total	**120**	**100%**

4. Conclusions

The prevalence of parasitic infestation, non-specific fever and anorexia were common in goats at study area. So, proper strategic and tactical anthelmintic treatment should be provided to reduce the prevalence of parasitic diseases with anorexia and malnutrition. On the other hand, proper vaccination and hygienic management against infectious diseases of goat can decrease the prevalence of the infectious diseases very effectively. However, it has been noted the duration of experimental study is not sufficient to explore the whole scenario of diseases and disorders. So, further extensive research works should be performed to determine the accurate prevalence of diseases and disorders in goat at study area.

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Conflict of interest
None to declare.

References
Alam MA, MR Amin, TK Paul, TK Saha, MK Rahman and MK Rizon, 2015. Prevalence of clinical diseases and disorders of goat at upazila livestock development center, Kapasia, Gazipur. Asian J. Med. Biol. Res., 1: 47-52.

Amin, MR, SS Hussain and ABMM Islam, 2001. Reproductive peculiarities and litter weight in different genetic groups of Black Bengal does. Asian-Australasian J. Anim. Sci., 14: 197-301.

Chakrabarti Amadendu, 2002. Textbook of Clinical Veterinary Medicine. Kalyani Publishers. pp. 28-29.

Chowdhury EH, AR Bhuiyan, MS Rahman, MSA Siddique and MR Islam, 2014. Natural peste des petits ruminants virus infection in Black Bengal goats: virological, pathological and immunohistochemical investigation. BMC Veterianry Research, 10: 263.

DLS, 2015-2016. Annual Report of Directorate of Livestock Services, Bangladesh.

Gunnarsson G, N Latoree-Margalef, KA Hobson, SL Van Wilgenburg Flmberg, B Olsen, RAM Fouchier and J Waldenstorm, 2012. Diseases dynamics and bird migration-linking mallards anas platyrhynchos and subtype diversity of the Influenza A virus in time and space. PLos One, 7: e35679.

Hassan MM, MA Hoque, SKMA Islam, SA Khan, K Roy and Q Banu, 2011. A prevalence of parasites in Black Bengal goats in Chittagong, Bangladesh. Int. J. Livest. Prod., 2: 40-44.

Iman F and EN Abou, 2015. Demographic, socioeconomic and environmental changes affecting circulation of neglected tropical disease in Egypt. Asian Pac. J. Trop. Med., 8: 881-888.

Islam MS, MSI Khan, HA Kader HA, Begum MR and Asgar MA. 2012. Prevalence of PPR of goat and their response to antibiotic treatment at Mirzagonj Upazila of Patuakhali District. J. Environ. Science Nat. Resources., 5: 181-184.

Kabir MH, MA Reza, KMA Razi, MM Parvez, MAS Bag MAS and SU Mahfuz, 2010. A report on clinical prevalence of diseases and disorders in cattle and goat at the Upazilla Veterinary Hospital, Ulipur, Kurigram. Int. J. Biol. Research, 2: 17-23.

Karim Z, KS Huque, MG Hussain, Z Ali and H Mosharraf, 2010. Growth and Development Potential of Livestock and Fisheries in Bangladesh. Bangladesh Food Security Investment Forum, Dhaka, Bangladesh.

Karim MR, MS Parvin, MZ Hossain, MT Islam, and MT Hussan, 2014. A Report On Clinical Prevalence Of Diseases And Disorders In Cattle And Goats At The Upazilla Veterinary Hospital, Mohammadpur, Magura. Bang. J. Vet. Med., 12: 47–53.

Khaled MAQ, MAM Ahmad and MO Mohammad, 2008. A study on Pathological and Microbiological conditions in Goats in Slaughterhouses in Jordan. Asian J. Animal Vet. Advances, 3: 269-274.

Lucky NS, MK Hossain, AC Roy, MM Haque, AHMM Uddin, MM Islam and MMR Howlder, 2016. A longitudinal study on clinical diseases and disorders of cattle and goats in Sylhet. Bangladesh. J. Advanced Vet. Animal Research, 3:24-37.

Momin MA, MA Islam, MM Khatun, MM Rahman and MA Islam, 2014. The epidemiology of bacterial pneumonia in Black Bengal goats in Bangladesh. The Bang. Vet., 31: 70-73.

Parvez MA, Faruque MR, BC Sutradhar, MM Rahman, A Mannan and R Khatun, 2014. Clinical Diseases and Manifestations of Goats and Cattle Recorded at Teaching Veterinary Hospital in Chittagong Veterinary and Animal Sciences University. Bang. J. Vet. Med., 12: 73-81.

Radostits OM, CC Gay, HW Hinchcliff and PD Constable, 2007. Veterinary Medicine: A Textbook of the Diseases of Cattle, Sheep, Pigs, Goats and Horses. 10th edition. pp. 9-16.

Rahman ML, MN Hossain, MM Ahsan, MSI Khokon and ASMG Kibria, 2011. Prevalence of PPR and its effective treatment in goats of Pabna district of Bangladesh. Int. J. Ani. Fish. Sci., 4: 418-422.

Rahman MA, MA Islam, MA Rahman, AK Talukder, MS Parvin MS and MT Islam, 2012. Clinical diseases of ruminants recorded at the Patuakhali Science and Technology University Veterinary Clinic. Bang. J. Vet. Med., 10: 63-73.

Rahman MA, Sharifuzzaman, JU Khokon, EH Sarker, M Sahiduzzaman and M Mostofa, 2014. Prevalence of parasitic diseases of goat at Pirganj Upazilla of Bangladesh. Int. J. Nat. Social Sci., 1:8-12.

Samad MA, 2001. Observations of clinical diseases in ruminants at the Bangladesh Agricultural University Veterinary Clinic. Bang. Vet. J., 35: 93-120.

Samad MA, MA Islam and A Hossain, 2002. Patterns of occurrence of calf diseases in the district of Mymensingh in Bangladesh. Bang. Vet. J., 36: 01-05.

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Sarker S and MH Islam, 2011. Prevalence and Risk Factor Assessment of Peste des petits ruminants in Goats in Rajshahi. Bangladesh. Vet. World, 4:546-549.

Singh RP, P Saravanan, BP Sreenivasa, RK Singh and Bandyopadhyay, 2004. Prevalence and distribution of peste des petites ruminants' virus infection in small ruminants in India. Rev. Sci. Tech.Off. Int. Epiz, 23: 807-819.