

Short communication

OCCURRENCE OF COMMON BLOOD PARASITES OF CATTLE IN SIRAJGONJ SADAR AREA OF BANGLADESH

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ABSTRACT

An epidemiological investigation was carried out on common blood parasites (protozoa and rickettsia) in clinically suspected (febrile, anorectic, non responsive to antibiotics therapy) cattle attended at District veterinary hospital of Sirajgong. Total 60 cattle were examined for blood parasite (protozoa and rickettsia) infection. Giemsa's stained were used on peripheral blood smears of suspected cattle. These slides were examined microscopically during September to October, 2004, of which 42 cattle (70 % of the total examined cattle) had *Anaplasma* infection (either *Anaplasma marginale* or *Anaplasma centrale* or both) and 2 cattle (3.3% of the total cattle) had *Babesia* infection but negative for other blood protozoal infection.

Key words: Anaplasmosis, babesiosis, cattle, occurrence

INTRODUCTION

Anaplasmosis is a tick transmitted haemoretic infection and babesiosis is tick transmitted haemoprotozoan infection of cattle. Both diseases have got a serious economic impact due to obvious reason of death, decreased production and lowered working efficiency. Both diseases have been reported in Bangladesh. The agro-ecological and geoclimatic conditions of Bangladesh are highly favourable for growth and multiplication of ticks which act as natural vectors of babesiosis and anaplasmosis. Prevalence of blood protozoa such as *Babesia bigemina*, *Theileria annulata*, *Theileria mutans* and blood rickettsia such as *Anaplasma marginale*, *Anaplasma centrale* has been reported in animals of Bangladesh (Ahmed, 1976; Samad and Gautam, 1984). Epidemiological surveillance is the important aspect to control both anaplasmosis and babesiosis in Bangladesh. Therefore, a further epidemiological study was undertaken to investigate present status of blood parasites in cattle in Bangladesh.

MATERIALS AND METHODS

The study was carried out on 60 clinically suspected indigenous and crossbred cattle which were febrile, anorectic and non responsive to antibiotic therapy during September to October 2004 attended at Sirajgonj District Veterinary Hospital. Two or three thin blood smears by puncturing ear vein for each cattle were prepared. Smears were then fixed with methanol and stained with Giemsa's stain and examined under microscope (100x) with immersion oil for the identification of blood parasites as described by Soulsby (1982). The cattle were grouped into different age groups to determine the age and breed susceptibility of blood parasites.

RESULTS AND DISCUSSION

Among 60 clinically suspected cattle examined, 42 cattle (70%) had either *Anaplasma marginale* or *Anaplasma centrale* infection or both infection and only 2 cattle (3.3%) had *Babesia* infection (Table 1).

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Table 1. Age wise occurrence of anaplasmosis and babesiosis (n = 60) of Sirajgonj Sadar area

Age	No. of cattle examined	Anaplasmosis		Babesiosis	
		No.	%	No.	%
6 months to 1 year	04	00	00	02	3.33
1 year to 2 years	04	02	3.33	00	00
2 years to 3 years	12	08	13.33	00	00
>3 years	40	32	53.33	00	00
Total	60	42	69.99	02	3.33

Anaplasma infection (70%) recorded in this study (Table 1) supports the earlier report of Anaplasma infection in Bangladesh (Talukdar *et al.*, 2001) who recorded 33% cattle of Baghabari Milk Shed Area had Anaplasma infection. The occurrence of subclinical Anaplasma infection in 5.93% cattle has been reported from Bangladesh (Samad *et al.*, 1989). On the contrary, Babesia infection (3.3%) recorded in this study is similar to the record of Samad *et al.* (1989) who recorded 3.28% subclinical prevalence of *Babesia bigemina* infection in cattle of the selected Milk vita project areas of Bangladesh. Shahidullah (1983) recorded a comparatively lower (2.29%) prevalence rate of such infections on microscopic peripheral blood smear examination whereas Banerjee *et al.* (1983) detected higher (14.53%) prevalence of *Babesia bigemina* in cattle of Bangladesh.

From Table 1 it was revealed that occurrence of anaplasmosis found in age of 1 year and above and the higher occurrence (53.33%) was in cattle of more than 3 years old. Age wise occurrence of anaplasmosis recorded in this study support the report of Chakraborti (2002) who recorded animal over 3 years age are highly affected by anaplasmosis. On the contrary, occurrence of babesiosis (3.33%) found in age of 6 months to 1 year in this study support the report of Chakraborti (2002) who recorded the greater infection rate is in animal in the 6-12 months age group and infection is uncommon in animal over 5 years of age.

Table 2. Breed susceptibility of babesiosis and anaplasmosis in cattle of Sirajgonj Sadar area

Breed	No. of cattle examined	Anaplasmosis		Babesiosis	
		No.	%	No.	%
Indigenous	14	07	11.66	00	00
Crossbred	46	35	58.33	02	3.33
Total	60	42	69.99	02	3.33

From Table 2, it was revealed that crossbred cattle were mostly affected (58.33%) with anaplasmosis than indigenous cattle (11.66%). Breed susceptibility of anaplasmosis recorded in this study support the report of Chakraborti, A. (2002). On the contrary, occurrence of Babesiosis (3.33%) was relatively higher in crossbred cattle. Breed susceptibility of Babesiosis recorded in this study support the report of Chakraborti, A. (2002). From the above discussion, it was revealed that crossbred cattle were more susceptible to anaplasmosis and babesiosis.

REFERENCES

1. Ahmed AKNU (1976). Blood parasites of domestic animals in Bangladesh. *Bangladesh Veterinary Journal* 10: 69-71.
2. Banerjee DP, Prasad KD and Samad MA (1983). Seroprevalence of *Babesia bigemina* infection in cattle of India and Bangladesh. *Indian Journal of Animal Sciences* 53: 431-433.
3. Chakraborti A (2002). *A Textbook of Preventive Veterinary Medicine*. 3rd edn., Kalyani Publishers, New Delhi. pp. 683.
4. Samad MA and Goutam OP (1984). Prevalence of *Theileria annulata* infection in cattle of Bangladesh. *Indian Journal of Parasitology* 7: 61-63.
5. Samad MA, Bashir SA, Shahidullah M and Ahmed MU (1989). Prevalence of haemoprotozoan parasites in cattle of Bangladesh. *Indian Journal of Veterinary Medicine* 13: 50-51.
6. Shahidullah (1983). Studies on haemoprotozoan disease of goats and cattle with their vector ticks. M. Sc. Thesis, Submitted to the Department of Medicine, Bangladesh Agricultural University, Mymensingh.
7. Soulsby E.J.L. (1982). *Helminths, Arthropods and Protozoan of Domesticated Animals*. 7th edn., Bailliere Tindall and Cassell Ltd., London.
8. Talukdar MH and Karim MJ (2001). Subclinical Anaplasma infection in crossbred cattle in Bangladesh. *Bangladesh Veterinary Journal* 35: 159-160.