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Research Article

Observational Study on Clinical Diseases and Disorders in Cattle Recorded Through One Year at Dakshin Surma Upazilla Under Sylhet District of Bangladesh

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Abstract | The research was performed to determine the diseases and disorders of cattle and to identify the associated risk factors in Dakshin Surma under Sylhet district. A total of 1000 clinical cases were diagnosed at Upazilla Veterinary Hospital, Dakshin Surma during March 2018 to February 2019. Disease diagnosis was made on the basis of owners' statement, general examination, clinical signs, gross pathology and laboratory procedures. Data was analyzed to determine disease prevalence in cattle with respect to breed, sex and season. Diagnosed diseases were categorized as bacterial, viral, protozoan and other diseases. According to the results, the prevalence of bacterial diseases were highest (36.4%) followed by the viral diseases (24.4%), protozoan diseases (18.9%), and other diseases (20.03%). Female were more susceptible to diseases (52.9%) than male cattle (47.1%). Disease prevalence varied according to seasons. Highest prevalence was recorded in rainy season (27.6%) followed by autumn season (18.4%) and summer season (11.6%). Our large set of data on cattle disease prevalence provides valuable insight to design and implement priority based research on specific disease and to take efficient control strategies against the diseases.

Keywords | Dakshin Surma Upazilla, Bacterial diseases, Clinical case, Prevalence, Diseases

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INTRODUCTION

Bangladesh is an over populated, rural and agrarian country in the world. Cattle are very important component of mixed farming system practiced in Bangladesh from long time. In Bangladesh, similar to high population density, livestock population is also high and near about 80% of population is employed in agriculture and livestock farming (BBS, 2008). Livestock is a vital component of rural economy in Bangladesh and is performing multifarious functions such as provision of food, draft power, transports etc. Bangladesh earns foreign currency by exporting several byproducts such as hides, skin, bone etc. Now-a-days biogas is also produce from cattle dung. The contribution of livestock in the magnitude of Gross Domestic Product (GDP) is about 16.23 % in Bangladesh. There are about 22.53 million cattle and 14.69 million goat populations in Bangladesh (DLS, 2009).The management practices of animals and geo-climatic condition of Bangladesh are favorable for the occurrence of various diseases. However, most of the animals are weak and emaciated with non-satisfactory productive performance due to malnutrition and diseases. Among the various constrains the development of cattle, both infectious and non-infectious diseases are most important limiting factors that causes significant mortality of adult cattle and neonatal calves each year (Debnath et al., 1995). It was reported that variation in different cattle breed, their sex and environmental factors greatly influence the disease prevalence in livestock animals including cattle (Alim et al., 2011, Karim et al., 2014). The present study

was undertaken to investigate the prevalence of cattle diseases considering breed, sex and seasons at five different locations of Dakshin Surma Upazilla under sylhet district in Bangladesh. The results of the current study will provide an overall idea about the distribution of diseases of cattle in the region which may assist researchers or clinicians to design and implement priority based research on specific disease and to take efficient control strategies against the diseases. And also control by vaccination and farmer's awareness, emphasis has increasingly shifted to economically important disease to the dairy products.

This report was collected from Upazilla Veterinary Hospital, Dakshin Surma, Sylhet. There was 7000 cattle population at Dakshin Surma (yearly report of Upazilla Veterinary Hospital, 2018). In every year, significant numbers of cattle are affected by several bacterial, viral and parasitic diseases. During this study period I observed near about 1000 cattle at Dakshin Surma Upazilla.

MATERIALS AND METHODS

Study Area and Study Period

Data were collect from the clinical register book of one year at Upazilla Veterinary Hospital, Dakshin Surma, Sylhet during the period of March 2018 to February 2019. Total clinical cases were examined and diagnosed in the Upazilla Veterinary Hospital, Dakshin Surma, Sylhet during the study period. The year was divided into six seasons namely spring(Feb-Apr), summer(Apr-Jun),Rainy (Jun-Aug), autumn (Aug-Oct), Late autumn (Oct-Dec),Winter (Dec-Feb) and the animals were separated into different groups according to their breed and sex.

Statistical Analysis

All the data obtained from hospitals, were organized, structure and analyzed with the help of Microsoft Corporation, 2007 windows package. The obtained information was loaded and stored on to the excel spread sheet. The collected data are analysis through tabular and percentage.

RESULTS AND DISCUSSION

Prevalence of mastitis was 8.5% (Table 1) in the study in cows. The findings support the report of Sarker et al. (1999), Samad (2001) and Rahman et al. (2012) who reported clinical mastitis in 0.89%, 0.71% and 0.9% cows respectively. Nooruddin et al. (1986) also reported 0.3% and 0.65% clinical mastitis in cows.

I got 7.2% prevalence (Table 1) of calf scour of cattle in the study area. Most of the cows of Dakshin Surma region are local breeds that are reared in farmers homestead. After birth calf are reared on cow milk rather than milk supplement, which provide them sufficient maternal antibody to fight against diseases like calf scour. May be this is the reason of lower prevalence of this disease in Dakshin Surma. Black quarter was diagnosed on the presence of pronounced swelling of the affected muscles of upper limb with gaseous crepitation. I found 11.2% prevalence (Table 1) of Blackquarter in cattle. These observations support the earlier findings of Rahman et al. (1972) and Samad (2001) who reported 0.31%,0.46% and Hoque and Samad (1996) reported 2.17% incidence of Black quarter in cattle from different geographical location of Bangladesh.

Table 1: Prevalence of bacterial diseases of cattle at Dakshin Surma Upazilla.

Name of the bacterial diseases	Diseased cattle (n=1000)	Prevalence (%)
1.Mastitis	85	8.5
2.Tetanus	72	7.2
3.Black quarter	112	11.2
4. Calf scour	95	9.5

Table 2: Prevalence of viral diseases of cattle at Dakshin Surma Upazilla

Name of the viral diseases	Diseased cattle (n=1000)	Prevalence (%)
1.Foot and mouth disease	104	10.4
2.Bovine epimeral fever	80	8
3.Warts	60	6

Table 3: Prevalence of protozoan diseases of cattle at Dakshin Surma Upazilla

Name of the protozoan diseases	Diseased cattle (n=1000)	Prevalence (%)
1.Anaplasmosis(Rickettsia)	66	6.6
2.Babesiosis	75	7.5
3. Theileriasis	48	4.8

Table 4: Prevalence of ectoparasitic diseases of cattle at Dakshin Surma Upazilla

Name of the ectoparasitic diseases	Diseases cattle (n=1000)	Prevalence (%)
1.Tick infestation	115	11.5
2.Lice infestation	88	8.8

This study recorded 10.4% cases of (Table 2) Foot and Mouth Disease in cattle. May be due to intensive immunization through blanket vaccination with trivalent vaccine, the number of Foot and Mouth Disease cases have reduced slightly from previous. This finding support the finding of Samad (2001) and Rahman et al. (2012) reported 1.79% and 1.3% cases of Foot and Mouth Disease in cattle. Comparatively higher prevalence rates of Foot and Mouth Disease in cattle have been reported by Rahman et al. (1972),

Table 5: Breed and sex-wise prevalence of diseases of cattle at Dakshin Surma Upazilla.

Name of Disease	Breed	No of Cases	Prevalence (%)	Sex	No of Cases	Prevalence (%)
Mastitis	Local	23	2.3	Male	0	0
	crossbreed	62	6.2	Female	85	8.5
Tetanus	Local	40	4	Male	23	2.3
	crossbreed	32	3.2	Female	49	4.9
Black quarter	Local	80	8	Male	69	6.9
	crossbreed	32	3.2	Female	43	4.3
Calf scour	Local	40	4	Male	39	3.9
	crossbreed	55	5.5	Female	58	5.8
Foot and mouth disease	Local	62	6.2	Male	59	5.9
	crossbreed	42	4.2	Female	43	4.3
Bovine epimeral fever	Local	45	4.5	Male	48	4.8
	crossbreed	35	3.5	Female	32	3.2
Warts	Local	23	2.3	Male	31	3.1
	crossbreed	37	3.7	Female	30	3
Anaplasmosis (Rickettsia)	Local	42	4.2	Male	31	3.1
	crossbreed	24	2.4	Female	35	3.5
Babesiosis	Local	39	3.9	Male	45	4.5
	crossbreed	36	3.6	Female	30	3
Theileriasis	Local	23	2.3	Male	29	2.9
	crossbreed	25	2.5	Female	19	1.9
Tick Infestation	Local	67	6.7	Male	56	5.6
	crossbreed	48	4.8	Female	59	5.9
Lice Infestation	Local	40	4	Male	42	4.2
	crossbreed	48	4.8	Female	46	4.6

Table 6: Season-wise prevalence of diseases of cattle at Dakshin Surma Upazilla.

Name of the diseases	Spring Season	Prevalence %	Summer Season	Prevalence (%)	Rainy Season	Prevalence (%)	Autumn Season	Prevalence (%)	Late Autumn Season	Prevalence (%)	Winter Season	Prevalence (%)
Mastitis	13	1.3	9	0.9	25	2.5	16	1.6	12	1.2	10	1
Tetanus	10	1	13	1.3	12	1.2	12	1.2	13	1.3	12	1.2
Black quarter	16	1.6	13	1.3	36	3.6	21	2.1	12	1.2	14	1.4
Calf scour	8	0.8	18	1.8	20	2	17	1.7	15	1.5	17	1.7
Foot and mouth disease	10	1	10	1	37	3.5	19	1.9	13	1.3	15	1.5
Bovine epimeralfever	13	1.3	14	1.4	9	0.9	14	1.4	18	1.8	12	1.2
Warts	5	0.5	7	0.7	8	0.8	12	1.2	16	1.6	12	1.2
Anaplasmosis (Rickettsia)	10	1	8	0.8	20	2	10	1	6	0.6	12	1.2
Babesiosis	3	0.3	1	0.1	27	2.7	15	1.5	10	1	19	1.9

Theileriasis	2	0.2	5	0.5	10	1	12	1.2	10	1	9	0.9
Tick infestation	22	2.2	11	1.1	40	4	15	1.5	12	1.2	15	1.5
Lice infestation	6	0.6	7	0.7	32	3.2	21	2.1	10	1	12	1.2
Total	118	11.8	116	11.6	276	27.6	184	18.4	147	14.7	159	15.9

Hoque and Samad (1996) and Sarkar et al. (2011) who reported 5.71%, 10.05%, 8.58% and 5.78% respectively.

Prevalence of Bovine epimeral Fever was 8% (Table 2) which was really high. The number of total cases of Bovine epimeral fever is doubtful since many of the cases are either go unnoticed or not reported due to short self-limiting course of this disease. Higher prevalence of Bovine Epimeral Fever in this area may be due to nature of disease spreading and open access of animals to contact with infected one during grazing.

This study recorded 6% prevalence (Table 2) of Warts in cattle. This findings support the reports of Samad (2001) and Rahman et al. (2012) reported and 0.7%, 0.58% and 0.19% prevalence of warts in cattle from Bangladesh respectively.

Prevalence of Babesiosis, Anaplasmosis, Theileriosis (Table 3) was medium. Weather condition of Dakshin Surma limits the chance tick infestation thus greatly reduce the occurrence of tick borne disease like babesiosis, anaplasmosis and theileriasis.

Prevalence of ectoparasitic diseases (Table 4) was high. Prevalence of tick and lice infestation were 11.5%, 8.8% in this study area. The prevalence of ectoparasite was relatively high in this area. Probable reason of this higher prevalence of ectoparasitic disease may be due to unhygienic condition of farm and improper practice of acaricide using in the farm.

Highest prevalence 52.9% recorded (Table 5) in female than male cattle which is 47.1%. So that female cattle are more susceptible to diseases than male cattle at Dakshin Surma Upazilla. This study also observed that local cattle of this area are more infected 52.4% than cross breed cattle 47.6%.

This study recorded 27.6% prevalence of diseases (Table 6) in rainy season which is highest and lowest prevalence recorded in summer season that is 11.6%.

CONCLUSION

Occurrence of diseases was recorded during clinical examination of sick cattle at Upazilla Veterinary Hospital, Dakshin Surma, Sylhet. This study was conducted to detect the present situation of occurrence of clinical diseases and disorders in the study area. From the study, it was observed that cattle were most susceptible to parasitic infestation. Parasitic infestation causes heavy economic losses in every year. So, regular anthelmintics treatment should be given to control the parasitic diseases, restriction of movement and frontier vaccination program must be undertaken in this area. And further research should be required to determine the accurate prevalence of diseases and disorders in cattle. Proper planning and program should be undertaken to prevent and control of the diseases and disorders of cattle in the study area. We have to be careful about our livestock population because our country is dependent on agriculture and livestock. And we are the veterinarian have to be more conscious about diagnosis of diseases and more practices about treatment.

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CONFLICT OF INTEREST

The author declare that no conflict of interest exists

AUTHORS CONTRIBUTION

It is clearly stated that all author has contributed significantly to the study.

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