

Contents lists available at [Sjournals](http://Sjournals.com)Journal homepage: [www.Sjournals.com](http://www.Sjournals.com)**Original article****A cross sectional study of several diseases in cattle at Chandanaish Upazilla of Chittagong district, Bangladesh****M.S. Pallab<sup>a,\*</sup>, S.M. Ullah<sup>b</sup>, M.M. Uddin<sup>c</sup> and O.F. Miazi<sup>c</sup>**<sup>a</sup>Department of Medicine and Surgery, <sup>b</sup>Department of Genetics and Animal Breeding, <sup>c</sup>Department of Anatomy and Histology, Chittagong Veterinary and Animal Sciences University, Khulshi, Chittagong-4202, Bangladesh.<sup>\*</sup>Corresponding author; Department of Medicine and Surgery, Chittagong Veterinary and Animal Sciences University, Khulshi, Chittagong 4202

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## ABSTRACT

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Prevalence of several diseases is one of the most economically important matters for maintaining a good treatment schedule of an area. This study detects the prevalence of several diseases and to evaluate the disease condition of cattle population in the selected area. Records of 306 clinical cases of cattle (120 dairy cows, 89 bulls and 97 calves) treated at the Chandanaish Upazila Veterinary Hospital during the month from December 2010 to February 2011 were analyzed to assess the importance of existing diseases. The recorded clinical cases were classified into seven major diagnostic groups, of which the highest prevalence was recorded with digestive disorders (47.05%), followed by parasitic infection (26.79%), infectious diseases (7.84%), respiratory disorder (6.2%), surgical affections (5.22%), metabolic disorder (4.24%), ectoparasitic infection (1.96%) and others (0.65%). The percentage of occurrence of major diagnostic groups of disease constituted infectious disease, (cows 41.66%, bulls 33.33%, calves 25%), parasitic disease (cows 37.80%, bulls 19.05% and calves 42.68%), digestive disorders (cows 41.66%, bulls 35.41% and calves 22.91%), respiratory disorders (cows 21.05%, bulls 26.31% and calves 52.63%), ectoparasitic infection (cows 16.66%, bulls 33.33% and calves 50%), metabolic diseases (cows 46.15%, bulls 38.46% and calves 15.38%) and surgical affections (cows 50%, bulls 12.5% and calves 37.5%). Though each of all the diagnostic groups of diseases is significant but the digestive disorder, parasitic and infectious diseases were the most pressing constraint

for improvement of cattle at the Chandanaish Upazila in Bangladesh.

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## 1. Introduction

Bangladesh has one of the highest cattle densities, 145 large ruminants/km<sup>2</sup> compared with 90 for India, 30 for Ethiopia and 20 for Brazil. But most of them trace their origin to a poor genetic base. The average weight of local cattle ranges from 125 to 150 kg for cows and from 200 to 250 kg for bulls that fall 25-35% short of average weight of all purpose cattle in India. Milk yields are extremely low, 200-250 litters during 10 month lactation period in contrast to 800 litters for Pakistan, 500 litters for India and 700 litters for all Asia. Despite of the highest cattle densities in Bangladesh, the current production of meat, egg and milk are inadequate to meet the current requirement and the deficits are 85.9%, 77.4% and 73.1% respectively. According to Bangladesh Economic Review (2006), the growth rate of GDP in 2004-2005 for livestock was the highest sub sector at 7.23% compared to 0.15% crops and 3.65% for fisheries sub sector. The PRSP (Poverty reduction Strategy Paper) stresses the importance of the livestock sub sector in sustaining the acceleration of the poverty reduction in the country (National Livestock Development Policy, 2007; Ministry of Livestock & Fisheries). As this is the dynamic potential of this emerging sub sector, it requires policy attention to animal health and production. Among the various constrains in the development of cattle, disease are one of the most important limiting factors which not only degrade the productivity of cows but also causing mortality, especially in cross-bred calves. In addition, it is well established that exotic and cross-bred cattle are highly susceptible to diseases in comparison to local zebu cattle. The occurrence of diseases and surgical affections of rural cattle have been reported from the district of Mymensingh (Rahman et al., 1972; Hossain et al, 1988; Das and Hashim, 1996) but there is a paucity of information on the occurrence of disease in cross-bred cows and calves in the cattle crossbreeding program through artificial insemination has recently been launched throughout the Bangladesh. In addition, to sustain the mini dairy farms and cattle population in Bangladesh, it is essential to save the neonatal calves from morbidity and mortality. Calf mortality up to 12 months of age has been reported to be 9% under rural condition (Debnath et al., 1990) and 13.4% under farm condition (Debnath et al., 1995) in Bangladesh. Very limited data on the clinical aspects of calf diseases are currently available concerning the important constraints on calf health in Bangladesh (Samad, 2000). However, reports on necropsy examination of dead calves (Hossain et al., 1988; Hossain and Hossain, 1989), general clinical incidence (Hoque and Samad, 1996; Masuduzzaman et al., 1999), surgical affections (Das and Hshim, 1996; Hashim and Das, 1997) and some etio-therapeutic aspects of calf diseases are available in inland literature (samad, 2000). This paper describes the clinical disease situation in rural calves recorded at the Chandanaish Upazila Veterinary Hospitals in the district of chittagong. The present study was undertaken and designed with the objectives of identification & analysis of the trend of clinical diseases of cattle available in Chandanaish Upazila which will help to take different steps as preventive measures to control the incidence of clinical diseases of cattle.

## 2. Materials and methods

Records of 306 clinical cases of cattle (120 dairy cows, 89 bulls and 97 calves) treated at the Chandanaish Upazila Veterinary Hospital during three months, from December 2010 to February 2011 were analyzed to assess the importance of existing diseases. The results were analyzed into seven major diagnostic groups in cows, bulls and calves. The age of each animal was determined by asking the owner and by dentition. Diagnosis of these cases was made on the basis of signalment (age, sex and breed), clinical history and clinical examinations. To avoid overlapping of these diseases, certain adjustments were made so that each disease was counted under only one group. The data on the occurrence of clinical diseases and disorders were analyzed into seven major diagnostic groups. These groups were: (1) Ectoparasitic infection, (2) Infectious diseases, (3) Parasitic disease, (4) Digestive disorders, (5) Respiratory disorders, (6) Metabolic diseases and (7) Surgical affection. The age and sex influence on the occurrence of diseases were also analyzed. Accordingly, data were analyzed into two age groups: cows and bulls (above 2 years) and calves (below 1 year).

### 2.1. Clinical examination

Examination of body condition, temperature, faeces and any prominent clinical signs were recorded. Based on these findings a presumptive diagnosis was made. In addition, skull bone was palpated to feel the thicknesses of bone, the umbilical region of the calves were examined for any swelling, wound or hernial ring. The preputial mucosa and glans penis were examined for the presence of any purulent discharge or ulceration. The hindquarter and thigh muscles were observed to see lameness and crepitation on palpation. The udders of the cows were palpated to detect any enlargement, reddening or pain. The body surfaces of animals were examined for any swelling, wound or solid outgrowth. In ungulate animals mouth and feet were observed to detect any vesicle, wound or salivation. Cows with the history of failure to conceive after insemination for more than three times were examined by rectal palpation whether there were any abnormalities of the reproductive tract. Ruminal movements were observed through palpation and auscultation. Different joints of the animals were examined to detect any swelling or pain. Abnormal sound of respiratory tract was detected through stethoscope. The groups of infectious disease were FMD, BQ, Papillomatosis, Arthritis, Naval ill, Eye infection and Mastitis. The groups of digestive disorder were indigestion & diarrhoea. The groups of surgical affections were wound, abscess, utero-vaginal prolapse. The respiratory disorder was diagnosed on the basis of owner's complaint and abnormal functions of the respiratory system like polypnea, dyspnea, coughing, thoraco-abdominal breathing and by examining the entire respiratory tract as described by Radostits et al., 2000. The ectoparasitic infection was diagnosed by itching, scab, and alopecia in the skin. Parasitic infestation was diagnosed by hair loss, emaciation, weakness, rough coat and pale visible mucus membrane. The metabolic disorder was diagnosed after parturition. In surgical cases, maggot wounds were found and abscess was confirmed by needle puncture.

### 3. Results and discussion

The prevalence of major infectious diseases (7.84%) comparing to total clinical cases are presented in Table 1. The occurrence of infectious disease in cows 3.26%, in bulls 2.61% and in calves 1.96% was found (Table 2). The occurrence of major infectious diseases in cows constituted mastitis 2.5%, foot and mouth disease 3.33%, whereas in bulls FMD was 4.49% (Table 3). The occurrence of FMD found in bulls comparatively higher. It might be due to lack of vaccination program and contagious nature of disease. The occurrence of mastitis in cows slightly lower than the report of Raman et al., (1972) who reported 3.65% prevalence rate of clinical mastitis in cows.

**Table 1**

Clinical case at hospital

Clinical cases	No. of cases	Prevalence*
Digestive disorder	144	47.05
Ectoparasitic infection	06	1.96
Infectious diseases	24	7.84
Metabolic disorder	13	4.24
Parasitic infection	82	26.79
Respiratory disorder	19	6.20
Surgical affection	16	5.22
Others (congenital)	02	0.65
Total	306	100

The prevalence of parasitic diseases were 26.79% comparing to all clinical cases (Table 1), of them 10.13% cases of parasitic infections recorded in cows, 5.22% in bulls and 11.43% in calves (Table 2). The result on the clinical prevalence of parasitic diseases in calves was higher than cows and bulls. It is possible because calves infected with parasitic infection become more susceptible to other diseases (Radostits et al., 2000). The poor management system of rearing calves might have also contributed to a greater extent in making the calves more susceptible to parasitic infection.

The prevalence of digestive disorder was 47.5% comparing all clinical case (Table 1). The occurrence of simple indigestion 29.1% and non-specific diarrhea 16.66% in cows, simple indigestion 33.70% and non-specific diarrhea 20.22% in bulls and simple indigestion 20.61% and non-specific diarrhea 11.34% in calves were recorded (Table 3).

Comparatively higher occurrence of indigestion and non specific diarrhea was found in bulls. Therefore, further specific investigation is required to elucidate the etiology and seasonal patterns of non-specific diarrhea in cattle.

**Table 2**

Occurrences of clinical cases in cows, bulls and calves

Clinical cases	Occurrence % (No.)		
	Cows	Bulls	Calves
Digestive disorder	19.6 (60)	16.66 (51)	0.10 (33)
Ectoparasitic infection	0.32 (1)	0.65 (2)	0.98 (3)
Infectious diseases	3.26 (10)	2.61 (8)	1.96 (6)
Metabolic disorder	1.96 (6)	1.63 (5)	0.65 (2)
Parasitic infection	10.13 (31)	5.22 (16)	11.43 (35)
Respiratory disorder	1.30 (4)	1.63 (5)	3.26 (10)
Surgical affection	2.6 (8)	0.65 (2)	1.96 (6)
Others (congenital)	-	-	0.65

The prevalence of respiratory disorder was 6.2% in all clinical case (Table 1). Respiratory disorders were recorded in cows 1.03%, bulls 1.63% and calves 3.26% in this study (Table 2). The above findings showed that calves were more vulnerable to respiratory problem than in cows & bulls. However, Hossain et al., (1988) reported 15.49% incidence rate of pneumonia in calves on necropsy examination in Mymensingh. Among several factors which are known to cause pneumonia, pasteurellosis reported from Bangladesh (Dewan et al., 1967; Rahman and Samad, 1981) as one of the cause but there may be other factors which need to be investigated.

The prevalence of ectoparasitic infestation was 1.96% in all clinical case (Table1). Tick & mite infestation was recorded as the major skin disease occurrence in cows 0.32%, in bulls 0.65% and in calves 0.98% in this study (Table 2). Investigation of etiological factors and classification of dermatitis could not be made in this limited general clinical investigation. However, Mia and Haque (1967), Samad et al., (1979) and Nooruddin and Dey (1990) have classified the different skin diseases of cattle in Bangladesh.

**Table 3**

Occurrences of clinical cases in cows, bulls and calves

Diseases and disorders	Occurrence % (No.)		
	Cows	Bulls	Calves
FMD	3.33 (4)	4.49 (4)	1.03 (1)
BQ	-	-	1.03 (1)
Papillomatosis	-	-	1.03 (1)
Arthritis	1.66 (2)	-	1.03 (1)
Navel ill	-	-	1.03 (1)
Eye infection	0.83 (1)	1.12 (1)	-
Dog bite	0.83 (1)	1.12 (1)	-
Mastitis	2.5 (3)	-	-
Indigestion	29.1 (35)	33.70 (30)	20.61 (20)
Non-specific diarrhea	16.66 (20)	20.22 (18)	11.34 (11)
Wound	4.16 (5)	4.96 (4)	1.03 (1)
Abscess	-	1.12 (1)	1.03 (1)
Utero-vaginal prolapse	2.5 (3)	-	-
Milk fever	0.83 (1)	-	-

The prevalence of surgical affection was 5.22% comparing to all clinical case (Table 1). Surgical affection was recorded as diseases occurrence in cows 2.6%, in bulls 0.65% and calves 1.96% in this study (Table 2). Utero-vaginal prolapsed 2.5% was recorded in dairy cows (Table 3). Hossain et al., (1986) reported 0.4% uterine prolapsed cases on the basis of analysis of hospital records on reproductive disorder cases in cows. The detailed studies on utero-vaginal prolapsed in animals have not yet been made in Bangladesh. However, the 5.08%

prevalence rate recorded in this study supports the 3.35% incidence rate reported in cows from India (Shukla and Parekh, 1987).

The prevalence of metabolic disorder was 4.24% in all clinical case (Table 1). The metabolic disorder was recorded as diseases occurrence in cows 1.96%, in bulls 1.63% and in calves 0.65% in this study (Table 2). The occurrence of metabolic disorder found in cows comparatively more than bulls and calves. Milk fever was recorded 0.83% in cow. The disorder mainly was observed after parturition but there may be other factors which need to be investigated.

#### 4. Conclusion

The study showed that digestive disorder of cattle predominantly present as well as parasitic infestation. Proper feeding, management and with regular anthelmintic therapy is therefore necessary to gain maximum output from rural cattle. The knowledge derived from this study will increase our understanding the clinical case of cattle in a particular area and taking necessary preventive measure to disease at national policy level. Therefore further studies would be required for the identification and characterization of etiological agents.

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