

**Investigation of different calf cases presented at Upazila  
Livestock Office and Veterinary Hospital, Narshingdi Sadar,  
Dhaka**



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**Roll No: 18/26; Reg. No: 02086**

**Session: 2017-2018**

**Intern ID: 24**

**A Production report submitted in partial satisfaction.**

**Of the requirements for the degree of**

**Doctor of Veterinary Medicine**

**Faculty of Veterinary Medicine**

**Chattogram Veterinary and Animal Sciences University**

**Khulshi, Chattogram-4225, Bangladesh**

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**November 2023**

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## List of abbreviations

<b>Abbreviation</b>	<b>Elaboration</b>
AI	Artificial Insemination
CVASU	Chattogram Veterinary And Animal Sciences University
DVM	Doctor of Veterinary Medicine
GDP	Gross Domestic Production
LEO	Livestock Extension Officer
N	Total number of cases
n	Number of cases
SALO	Sub Assistant Livestock Officer
ULO	Upazila Livestock Officer
ULO and VH	Upazila Livestock Office and Veterinary Hospital
VS	Veterinary Surgeon
VFA	Veterinary Field Assistant

## **Abstract**

Calf diseases are concerning for marginal farmers who rear a small number of cattle at their home premises. However, the current study has been conducted to estimate the prevalence and distribution of different calf diseases or disease conditions and to describe the prescription patterns for different calf diseases. This study was conducted at upazila livestock office and veterinary hospital from 16 April to 8 June 2023. Clinical data and epidemiological data were collected through interviewing the farmers and clinical inspection of the animals. Obtained data were stored in Microsoft Excel 2013 and sorted and cleaned for statistical analysis. This study obtained Navel ill (33.3%), calf scour (11.1%), bovine coccidiosis (13.3%), idiopathic diarrhea (13.3%), parasitic infestation (15.6%) and keratonconjunctivitis (13.3%). The duration of different diseases were reported in the study following: navel ill (2-5 days), Endoparasitic infestation (7-15 days), bovine coccidiosis (2-4 days), idiopathic diarrhea (3-5 days), keratoconjunctivitis (5-7 days) and calf scour (3-5 days). Crossbred male calves of less than one month had more cases than that of the local female calves. Navel ill was treated with Ceftriaxone (26.7%) and a combination of penicillin and streptomycin (26.7%), whereas amoxicillin (33.3%) and ceftriaxone (33.3%) were used in idiopathic diarrhea. As supportive medicines, povidone iodine, flunixin meglumine and fluid therapy were commonly used. Veterinary provision of calves at field level is so scanty due to the lack of knowledge of marginal farmers which requires further initiative to make farmer interested in taking treatment from upazila livestock office and veterinary hospital. Moreover, the study could help in future researches that would be beneficial for the calf health and farmer's economy.

**Keywords:** Calf cases, , Prevalence, Drug prescription, Narshingdi.

## Chapter 1: Introduction

Livestock is a rapidly growing agricultural subsector in Bangladesh, ensuring food security, national protein requirements, and solving unemployment problem. By 2023, the contribution from this subsector to the national gross domestic product (GDP) amounts to 1.9%, employing directly 20% and partly 50% of the total population (DLS, 2023). Major livestock species in Bangladesh are cattle, buffalo, goats, sheep, and poultry, particularly chicken and duck (Khaleduzzaman *et al.*, 2022). Livestock provides around 36% of the country's protein needs, with 24.9 million cattle representing the large animal population (Ali *et al.*, 2011; DLS, 2023).

Rearing cattle at the homestead is a way of poverty alleviation for the rural people in Bangladesh (Saadullah, 2001). Farmers usually raise 1-3 local cattle per household under an extensive rearing system (Hemme *et al.*, 2007). Only lactating cattle are occasionally provided with concentrate, while other cattle are raised on a regular, conventional diet—supplemented with a small amount of concentrate feed for fulfilling daily needs without nutritional value (Datta *et al.*, 2019). However, it is recommended for commercial dairy farms, to get a calf per cow per year, to earn the most profit from a dairy (Jalal *et al.*, 2017). Khan *et al.* (2010) reported low conception rate and long calving interval in local cattle breeds. In this situation, the death of calf or calf illness causes huge economic loss of a marginal farmer. A rough estimation of net profit reduction was reported to 38% due to calf morbidity and mortality (Blood and Rhodostits, 1989). Proper management of the calf can ensure the welfare and well-being of a calf starting from the time of calving, because rough handling can result in dystocia and other reproductive complications that can endanger calf's life, as well as post-uncleanliness can lead to various calf diseases (Islam *et al.*, 2020). A newborn calf spends only a brief time in each of its final pre-weaning homes before leaving the birthing enclosure, where it is regarded as a possible source of illness (McGuirk, 2008). Both infectious (e.g., calf diarrhoea, septicemia, pneumonia) and non-infectious diseases

(e.g., immunodeficiency, seasonal effects, and faulty management condition) become hazardous for the calf of one month (McGuirk, 2008; Singh *et al.*, 2009).

Surgical complication causes death of the calf leading to different infectious diseases, such as navel ill (Samad *et al.*, 2002). About 29% of calves die of umbilical diseases. Navel ill is the inflammation of the umbilicus and its related structures due to infection of *Salmonella* species, *Escherichia coli*, *Corynebacterium pyogenes*, *Staphylococcus streptococcus*, *Proteus* species, *Actinomyces pyogenes* that mostly affects the calves up to one week of age (Sherif *et al.*, 2017; Rassel *et al.*, 2020). Joint ill is further consequence of navel ill if the cause of navel ill is not recovered and symptoms appear within 1-2 weeks of age of the calf (Anon, 2022). When the infection of different organism systematically spread from localized infection of navel cord to synovial membrane causing displacement of joint capsule leading to joint ill of calf (Bagga *et al.*, 2009; Jalal *et al.*, 2017). Although umbilical stump dries up from 7 to 10 days, the bacteria can enter the calf's body through the navel or umbilical cord due to faulty handling of the newborn calf or the unhygienic environment of the calf pen (Hides and Hannah, 2005; Abbas, 2021; Kharb *et al.*, 2021). Some poor practices, for example, calf delivery in unhygienic environment, cutting umbilical cord near to calf's abdominal wall with some mismanagement of calf setting, for example, allowing newborn calf to mix with other calves or insufficient supply of colostrum immediately after calving (Smith, 2003; Radostits *et al.*, 2007; Bagga *et al.*, 2009; Naik *et al.*, 2011).

Besides navel ill, numerous gastrointestinal ailments affect calves, including bovine coccidiosis, calf scour, endoparasitic infestation, and idiopathic diarrhoea (Step *et al.*, 2002; Angelos, 2015; Manzoor *et al.*, 2018). Around 30% of calf death is accountable to gastrointestinal disease (Nehru *et al.*, 2017). Gastrointestinal problem, especially diarrhea is common in calf with and without infectious causes (Grünberg, 2022).

Bovine coccidiosis is a serious protozoan sickness that affects cattle around the world and is brought on by species of the genus *Eimeria* (Dauguschies and Najdrowski, 2005). This affects the calf of 1.5 to 2 months (Manya *et al.*, 2008). Calf scour in calf can occur



due infectious (e.g., Rotavirus, Coronavirus, *Salmonella* species, *Clostridium* species, enteropathogenic *Escherichia coli*, *Cryptosporidium* species) and non-infectious causes (excessive intake of milk) (Bazeley, 2003; Blowey *et al.*, 2008; Manzoor *et al.*, 2018). The illness of the disease varies according to the variation of the causal agent from 5 to 14 days and takes 3-5 days for recovery (Manzoor, *et al.*, 2018). Endoparasitic infestation is another cause gastrointestinal diseases of calf that are considered as a barrier of the cattle farm. A large range of endoparasites including trematodes, cestodes and nematodes are responsible for causing diarrhea, weight loss, anaemia and mortality (William, 1994). Idiopathic syndrome is another gastrointestinal disease of calf that is referred as upper alimentary tract ulcerative syndrome due to ulceration without defined cause of enteritis (Hunnam *et al.*, 2021). In Bangladesh, numerous studies have been conducted on calves with neonatal illnesses and their recurrence but very few works have been carried out regarding the healing of navel ill, (Hoda *et al.*, 2018; Jaman *et al.*, 2018; Mishra *et al.*, 2020). As there is a very little literature on the occurrence of various calf cases including navel ill in Bangladesh specially Narshingdi sadar, the present study describes the occurrence of different calf cases along antibiotic prescription pattern in Narshingdi sadar which will be great helped for future study on calf disease in Bangladesh.

Therefore, this study has been conducted with the objectives i) to estimate the prevalence of different calf cases, ii) to know the distribution of different calf cases according to calf's characteristics and iii) to describe the prescription pattern for different calf cases.

## **Chapter 2: Materials and methods**

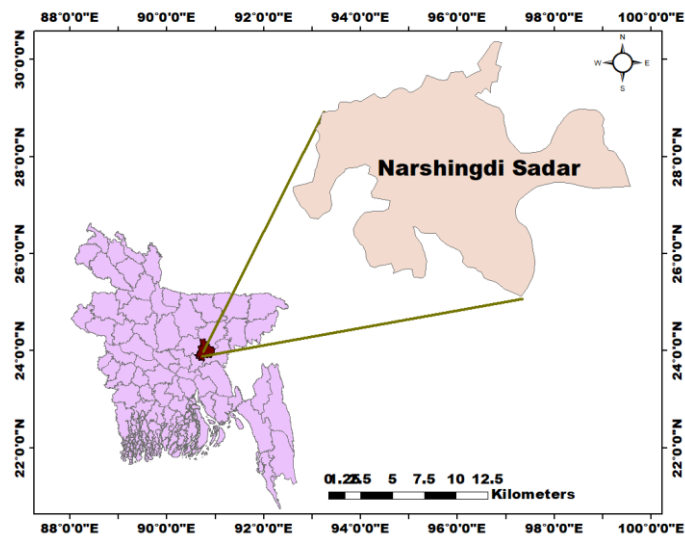
### **2.1. Study design and duration**

A descriptive study was carried out on different calf cases presented at Upazilla Livestock Office and Veterinary Hospital (ULO and VH), Narshindi Sadar, Narshingdi during 2-month clinical rotation of one-year work-based learning program of Doctor of Veterinary Medicine (DVM) Program in Chattogram Veterinary and Animal Sciences University (CVASU) (Sattar *et al.*, 2022) from 16 April to 8 June 2023.

### **2.2. Description of upazilla livestock office and veterinary hospital, Narshingdi Sadar, Narshingdi**

Upazila Livestock Office and Veterinary Hospital, Narshindi Sadar situated at East brahmondi, Narshingdi. This is well known to the rural and marginal livestock farmers of the Narshingdi Sadar upazila. The patients come from different union of NarshingdiSadarUpazila, such as Char Dighaldi, Chinishpur, Hajipur, Karimpur, Meherpara, Nazarpur, Nuralapur, Paikarchar, Panchdona, and Silmandi. Average 40 cases of different types of species are presented to the ULO and VS. According to organogram ULO and VH consist of one Upazila Livestock Officer, one Veterinary surgeon, one Sub Assistant Livestock Officer in extension, one Sub Assistant Livestock Officer in animal health or compounder, one Sub Assistant Livestock Officer in Artificial Insemination, one computer operator, one dresser and one office assistant (DLS,2023). A shortage of manpower exists in ULO and VH. The total manpower of ULO and VH is 6 instead of 10. Instead of three SALOs, there is just one, and there is no dresser or office assistant. The primary responsibility of the ULO is administrative work, while the VS treats patients medically and surgically at ULO and VH or visits other farms or cases when the owners are unable to come to ULO and VH and maintains register of the patients and SALO in extension conducts different government projects and does extension work in field conditions (DLS, 2023). The SALO in animal health function is to carry out vaccination campaigns and train rural people (DLS, 2023). The

laboratory diagnostic facilities of the hospital are poor but only have a microscope, which is used for the coproscopic examination. However, recently an ultrasound machine has been incorporated in the facility. There is no functional post mortem room. Veterinary waste, including used bandages and swabs, sharp needles, syringes, expired medication, and medicinal vials, were disposed of in the pit beside the hospital. Separate pits are used for the disposal of manure and animals waste products.



**Figure 1. Showing the location of Upazila Livestock Office and Veterinary Hospital Narshingdi sadar, Narshingdi**

### **2.3. Data collection**

With the permission and supervision of the VS of the hospital inspected all calf cases for the study after the initial registration for recording demographic information of cases (age, sex and breed), clinical history (including duration of illness), clinical symptoms, types of bedding use and clinical examination findings. Diagnosis of cases was made by the registered veterinarian based on the clinico-epidemiological findings and accordingly, treatment/prescription was given for each case. A structured record-keeping

sheet prepared by me was used to record the aforementioned information for each calf case.

#### **2.4. Diagnosis of different case types**

**Bovine coccidiosis:** If a calf was brought with bloody diarrhea, straining, dehydration, and loss of appetite (Kennedy *et al.*, 2001), the case was considered as navel ill case.

**Calf scour:** A calf scour case of calf was considered with the lesions of diarrhea, dehydration and loss of appetite (Stoltenow *et al.*, 2003).

**Endoparasitic infestation:** The calf with weight loss, inappetite, are diarrhea considered as endoparasitic infestation case who were then taken for coproscopy (Hossain and Ali, 1998). Coproscopy was done in direct smear method (Hossain and Ali, 1998).

**Keratoconjunctivitis:** If a calf was brought with the symptoms of keratitis, ocular discharge, sensitivity to sunlight, and pain in eye (Alexander, 2010)), the case was considered as keratoconjunctivitis case.

**Navel ill:** If a calf was brought with fever, painful soft or hard swelling in the umbilical region with or without purulent discharge and maggot infestation (Bagga *et al.*, 2009), the case was considered as navel ill case.

#### **2.5. Data analysis**

The data were stored in Microsoft Excel 2013. Gradually the data were sorted, and cleaned for statistical analysis. Microsoft Excel 2013 was used to calculate the distribution of the diseases accordingly for different diseases. The distribution of different calf diseases was also enumerated according to variation of different calf's attributes (sex, age, and breeds). Similarly, the distribution of the prescribed medicines against the diseases was also reckoned using Microsoft Excel 2013. All the distribution

was obtained by dividing the specific cases by the total number of cases and presented the distribution in frequency number and percentage.

## Chapter 3: Results

### 3.1. Prevalence and distribution of different calf diseases

Navel ill is mostly recorded disease (33.3%) followed by endoparasitic infestation (15.6%), bovine coccidiosis (13.3%), idiopathic diarrhea (13.3%), keratoconjunctivitis (13.3%) and calf scour (11.1%) (Table 1).

Most of the calves, were affected by navel ill experience 4 days of illness before presenting to the hospital. A case was recorded to suffer from endoparasitic infestation for 15 days. Then, mostly reported cases were bovine coccidiosis, calf scour, idiopathic diarrhea, keratoconjunctivitis and navel ill experience the diseases for 4 days, 5 days, 5 days, 7 days (average), and 5 days, respectively (Table 2).

**Table1:** Distribution of calf diseases (N=45 cases) presented presented at Upazila Livestock Office and Veterinary Hospital in Narshingdi Sadar, Narshingdi (from 16 April to 8 June, 2023)

Disease name	Frequency	Percentage
Navel ill	15	33.3
Endoparasitic infestation	7	15.6
Bovine coccidiosis	6	13.3
Idiopathic diarrhoea	6	13.3
Keratoconjunctivitis	6	13.3
Calf scour	5	11.1
Total	45	100

**Table2.** Duration of illness of different calf cases (N= 45 cases) presented at to Upazilla Livestock Office and Veterinary Hospital in Narshindi Sadar, Narshingdi (from 16 April to 8 June 2023)

<b>Disease name</b>	<b>Number of cases</b>	<b>Duration of illness</b>
<b>Navel ill</b>	2	5
	6	4
	5	3
	2	2
<b>Endoparasitic infestation</b>	1	15
	1	12
	3	10
	2	7
<b>Coccidiosis</b>	3	4
	2	3
	1	2
<b>Idiopathic diarrhea</b>	1	5
	3	4
	2	3
<b>Keratoconjunctivitis</b>	2	7
	2	6
	2	5
<b>Calf scour</b>	1	5
	1	4
	3	3

### **3.2. Distribution of different calf diseases by gender, age and breed**

Male calf cases (n= 24 cases) are more than that of female calf cases (n= 21 cases). Bovine coccidiosis (8.3%), calf scour (8.3%), endoparasitic infestation (12.5%), idiopathic diarrhea (16.7%), keratoconjunctivitis (12.5%) and Navel ill (41.7%) had highest prevalence among male calves while the female calves had bovine coccidiosis (19%), calf scour (14.3%), endoparasitic infestation (19%), idiopathic diarrhea (9.5%), keratoconjunctivitis (14.3%) and Navel ill (23.8%).

Calves of less than one month had more cases (n= 25 cases). Some cases of bovine coccidiosis (16%), idiopathic diarrhoea (4%) and all cases of navel illness (60%), calf scour (20%), occurred at less than one month of age, while keratoconjunctivitis (30%) and parasitic infestation (35%), occurred at more than one month of age (Table 4).

Crossbred calves (n= 28 cases) have different diseases more frequently than that of the local breed (n= 17 cases). Followed by, bovine coccidiosis (14.3%), calf scour (10.7%), endoparasitic infestation (14.3%), idiopathic diarrhea (14.3%), keratoconjunctivitis (14.3%) and Navel ill (32.1%) had the highest prevalence among crossbred calves presented at the hospital while the local breed had bovine coccidiosis (11.8%), calf scour (11.8%), endoparasitic infestation (17.6%), idiopathic diarrhea (11.8%), keratoconjunctivitis (11.8%) and Navel ill (35.3%) (Table 5).



**Table3:** Distribution of calf diseases (N= 45 cases) according to gender presented at Upazilla Livestock Office and Upazila Veterinary Hospital in Narshingdi sadar, Narshingdi (16 april to 8 june, 2023)

<b>Diseases</b>	<b>Male</b>	<b>Female</b>
	<b>n(%)</b>	<b>n(%)</b>
<b>Bovine coccidiosis</b>	2(8.3)	4(19)
<b>Calf Scour</b>	2(8.3)	3(14.3)
<b>Endoparasitic infestation</b>	3(12.5)	4(19)
<b>Idiopathic diarrhea</b>	4 (16.7)	2(9.5)
<b>Keratoconjunctivitis</b>	3 (12.5)	3(14.3)
<b>Navel ill</b>	10(41.7)	5(23.8)
<b>Total</b>	24(53.33)	21(46.67)

**Table4:** Distribution of calf diseases (N= 45 cases) according to age group presented at Upazila Livestock Office and Veterinary Hospital in Narshingdi sadar, Narshingdi (16 April to 8 June, 2023)

<b>Disease</b>	<b>1-30 days</b>	<b>31-120 days</b>
	<b>n(%)</b>	<b>n</b>
<b>Bovine coccidiosis</b>	4(16)	2(10)
<b>Calf scour</b>	5(20)	0
<b>Endoparasitic infestation</b>	0	7(35)
<b>Idiopathic diarrhea</b>	1(4)	5(25)
<b>Keratoconjunctivitis</b>	0	6(30)

<b>Navel ill</b>	15(60)	0
<b>Total</b>	25(55.56)	20(44.44)

**Table 5.** Distribution of calf diseases (N= 45 cases) according to breed presented at Upazila Livestock Office and Veterinary Hospital in Narshingdi Sadar, Narshingdi (from 16 April to 8 June, 2023)

<b>Diseases</b>	<b>Local breed n(%)</b>	<b>Cross breed n(%)</b>
<b>Bovine coccidiosis</b>	2 (11.8)	4 (14.3)
<b>Calf scour</b>	2(11.8)	3(10.7)
<b>Endoparasitic infestation</b>	3(17.6)	4(14.3)
<b>Idiopathic diarrhea</b>	2(11.8)	4(14.3)
<b>Keratoconjunctivitis</b>	2 (11.8)	4 (14.3)
<b>Navel ill</b>	6(35.3)	9(32.1)
<b>total</b>	17(37.78)	28(62.22)

### 3.3. Distribution of prescribed medicines against reported diseases

Ceftriaxone and a combination of penicillin and streptomycin were mostly used medicines in the case of navel ill, whereas amoxicillin and sulphadimidine were used in Calf scour, amoxicillin and ceftriaxone were used in idiopathic diarrhea, 1% silver nitrate, albendazole, and a combination of amprolium and sulfaquinoxaline were reported to be used against keratocunjunctivitis, parasitic infestation, and coccidiosis, respectively.

**Table6:** Distribution of prescribed medicines (Antibiotics/Anthelmintics/Antiprotozoal/Other drugs) according to the reported diseases (Navel ill/Calf scour/Idiopathic diarrhoea/Parasitic infestation/Coccidiosis) in Upazila Livestock Office and Veterinary Hospital in Narshingdi Sadar, Narshingdi (from 16 April -8 June, 2023)

<b>Diseases</b>	<b>Antibiotics/Anthelmintics/Anti protozoal</b>	<b>n%</b>	<b>Other drugs</b>
<b>Navel ill</b>	Amoxicillin	2(13.3)	Fluxinmeglu mine, Pheniramine maleate, Povidone iodine
	Ceftriaxone	4(26.7)	
	Gentamycin	3(20)	
	Marbofloxacin	2(13.3)	
	Penicillin-Streptomycin	4(26.7)	
<b>Calf scour</b>	Amoxicillin	3(60)	Fluid therapy
	Sulfadimidine	2(40)	
<b>Idiopathic diarrhea</b>	Amoxicillin	2(33.3)	Fluid therapy
	Ampicillin	1(16.7)	
	Ceftriaxone	2(33.3)	
	Sulfadimidine	1(16.7)	
<b>Keratoconjunctivitis</b>	1% silver nitrate	4(66.7)	
	Ciprofloxacin-Dexamethasone	2(33.3)	
<b>Endoparasitic infestation</b>	Albendazole	4(57.1)	Liver tonic
	Levamisole-Triclabendazole	3(42.9)	
<b>Bovine coccidiosis</b>	Amprolium-Sulfaquinoxaline	6(100)	Vitamin k

## Chapter 4: Discussion

Household livestock in Bangladesh significantly contributes to employment, income, and poverty reduction. Raising small-scale domestic cattle is a crucial side business for farmers, but calf diseases are common and cause distress due to lack of veterinary provisions and knowledge about calf rearing. This study explores common calf diseases in rural villages, focusing on their distribution based on sex, age, and breed, and demonstrating the prescription of different calf disease patterns.

A range of calf diseases was recorded in this study, with the predominant of navel ill (33.3%) and endoparasitic infestation (15.6%) cases and our results corresponded to the reported prevalence of earlier studies in different parts of Bangladesh (Hasan *et al.*, 2017; Pallab *et al.*, 2012; Talukder *et al.*, 2015). Unhygienic maternity pen, inadequate colostrum feeding, not maintaining the aseptic condition during cutting the navel cord are most responsible causes of navel ill reported in Mee, (2008) and Hasan *et al.*, (2017) that matched with the current study.

Kabir *et al.*, (2014) reported 42.2% prevalence of endoparasitic infestation due to lack of awareness regarding animal rear that was similar to the current study findings. Due to customary practices of rearing animals by grazing them next to roads and wetlands, parasitic infestations are common in Bangladeshi local areas (Akter *et al.*, 2011).

The prevalence of calf diseases varies according to their variation of age, sex and breed (Jalal *et al.*, 2017). The prevalence of navel illness was found to be higher in those under 30 days in the current that was similar to the findings of Rassel *et al.*, (2020) showing 69.71%. Rassel *et al.*, (2020) reported female calves are less susceptible to navel ill because male calves have a higher risk of urine contamination and infection around their navel area due to the urethral opening being located closer to the navel area than it is in female calves which affirmed with the current study finding. Compared to native calves (5.71%), the incidence was higher (94.29%) in cross-breed individuals (Rassel *et al.*,

2020). Crossbred cattle may be more susceptible to disease because they are less able to fend off infections than their native breeds which matched with the current study findings (Tageldin *et al.*, 2014). As the calves are reared in semi-scavenging or scavenging systems in rural area, they are more susceptible to parasitic infestation (Nath *et al.*, 2013; Akter *et al.*, 2011). The current study found 35% of the prevalence of endoparasitic infestation above one month of aged calf that was similar to Nath *et al.*, 2013. A study of Bangladesh showed 48.4% prevalence of gastrointestinal infection in male calves while the present study found more prevalence of endoparasitic infestation in female calves. On the other hand, Siddiki *et al.*, (2010) reported that parasitic infections were equally common in Red Chittagong Cattle and cross breed that was different from the current study findings.

The current study reported longer duration of illness of different reported diseases: bovine coccidiosis (2-4 days), calf scour (3-5 days), endoparasitic infestation (7-15 days) idiopathic diarrhea (3-5 days), keratoconjunctivitis (5-7 days) and navel ill (2-5 days). As the rural farmers are unaware about the calf diseases and there is a lack of veterinarian in the villages, the farmers go to the unscrupulous veterinary service providers of their locality. When they fail to treat the animals properly, the farmers go to ULO and VH for treatment, which does not bring blessing for the animals.

Navel ill is treated by dressing the wound with povidone iodine and then a combination of dihydrostreptomycin and penicillin was administered with symptomatic medicines, for example, analgesic, anti-inflammatory, and antipyretic, flunixin meglumine ((Naik *et al.*, 2011; Faez *et al.*, 2015). The current study also showed the similar treatment of pattern practiced at the field level.

In endoparasitic infestation a combination of levamisole and triclabendazole is used as broad spectrum anthelmintic. Triclabendazole have therapeutic activity in case of both mature and immature flukes whereas levamisole is a highly accepted anti-nematodal medication in wide variety of host (sheep, cattle, horses, pigs, dogs, and chickens)

(Islam *et al.*, 2005). Levamisole functions as an immunomodulatory agent in various animal species (Qureshi *et al.*, 2000; sandu and Ahmad, 2003).

## **Conclusion**

Calves are susceptible to different kinds of diseases, such as Navel ill, calf scour, coccidiosis, idiopathic diarrhea, keratoconjunctivitis, and parasitic infestation. Here, navel illness and parasitic infestation are the most prevalent diseases among other diseases. The prevalence of navel illness and parasitic infestation is 33.3% and 15.6%, respectively. The prevalence of Navel ill and calf scour, which both occur within a month of birth, is 20% and 60%, respectively. Male calves are more prone than female calves to cases of navel ill and idiopathic diarrhea, with prevalence rates of 41.7% and 16.7% respectively. All of these diseases are more common in cross-breeds than in local breeds. In cross-breeds, the prevalence of Navel ill and calf scour is 32.1% and 10.7%, respectively. Duration of illness is more because of farmers unawareness. Following the completion of the povidone iodine dressing procedure, broadspectrum antibiotics such as ceftriaxone, gentamycin, and a combination of streptomycin and penicilin are used in the treatment protocol for navel illness. Broadspectrum antibiotics are also used in calf scours and idiopathic diarrhea. Reducing the diseases that affect newborn calves requires good management. Consequently, to achieve optimal results, proper feeding management combined with consistent anthelmintic therapy is required.

## **Limitations**

1. Because of the study's tiny sample size, it is not representative of the whole country.
2. We were unable to determine the true prevalence of diseases or disease conditions because not all infected cases were brought to the hospital and the total number of calves was not fully recorded.
3. There are inadequate lab facilities.
4. Farmers might have hid some information such as Duration of illness, previous treatment by quack etc.

So, there might have happened some level of information gap.



## **Recommendation and future direction**

1. Owners do not have proper knowledge about the management of calves after birth, and most of them depend on the quack for initial treatment.
2. To solve these conditions, farmer training is important about the management practices of calves.
3. This information may be utilized in future to identify disease risk factors.

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## **Acknowledgements**

When I express my gratitude, I want to keep in mind the Almighty Allah, who gives me the strength to get through every challenge I encountered while doing my internship.

I would like to convey my heartiest appreciation and gratitude to my supervisor Prof. Dr. Md. AhasanulHoque, Department of Medicine and Surgery of CVASU. Without his guidance, it was really impossible for me to develop such a clinical report. It was a great journey of work that I have passed.

I am also appreciative to Prof. Dr. A.K.M. Saifuddin, CVASU's Director of External Affairs, for arranging for such a wonderful placement that gave me lots of practical experience.

I would like to mention Dr. Meherjan Islam Ashrafi, MS in epidemiology, CVASU for her heartfelt support during my journey.

I would like to mention Dr. Abdullah Al MamunShagar, Veterinary Surgeon, Upazila Veterinary Hospital, Narshingdisadar, Narshingdi for allowing me working for clinical report purpose and

Lastly, I would like to remember my family, my parents whose contribution after me can't be measurable.

## **Biography**

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