Prevalence of Clinical Diseases and their Therapeutic managementin Cats at Tejgaon Metro Livestock Office of Dhaka

Abstract

Domestic cats are the most popular and a well-known invasivepet species worldwide. over a two-month span Between February to April, 2022 a cross-sectional study was carried out at Tejgaon Metro Livestock Office (TMLO) in Dhaka to determine the prevalence of clinical disorders in cats.202 cats of different 200 cat owners observed with various clinical situations. With the use of an MS Excel spreadsheet, all the data collected from different cat owners were sorted, structured, and evaluated. Most instances (83.17%) are clinical, followed by vaccinations and physicals (16.83%). The most common clinical case was cat viral infection, which had a 17.33% frequency. Cats cannot receive surgery since there aren't enough tools or staff. Clinical diseases were found to be more common in the following areas: respiratory diseases (pneumonia 7.43%), digestive system diseases (diarrhea due to both infectious and noninfectious causes 7.92%, gastritis 5.45%), eye diseases (eye disorder such as cataract, ulceration 1%, conjunctivitis 3.46%), parasitic infection (internal parasite infestation 6.93%, ecto parasite infection 1.98%), nutritional deficiencies(5.45%),mastitis (1%), mouth wounds (1.98%), fractures (0.49%), myiasis abscesses (1%), and urinary tract infections (3.96%) were also observed.Female cats and cats of the Desi or indigenous breed had a higher prevalence of illness. The most typically used medication (47%) was antibiotic, and ceftriaxone was the most extensively used antibiotic (20.3%). These data cover vaccination practices for cats, variations in management throughout Dhaka's various topographies, and owner socioeconomic status.

Keywords: Cat, clinical conditions, prevalence, Dhaka.

1.Introduction

Over the past few decades, domestic cats have gained popularity as pets both domestically and internationally (Lepczyket al. 2015). Regardless of social standing, a sizeable majority of individuals around the world own pets. In Bangladesh's Dhaka, society place a high value on cats. They serve as vital companions in many homes, promoting the physical., social., and mental development of youngsters as well as the wellbeing of their owners (Dohooet al. 1998; Robertson et al. 2000). The benefits of cats to our society include friendship, interaction with children, protection of the home and alerting the owner of any dangerous conditions, giving gifts to particular people, and economic gain (Parvez et al. 2014). Pet ownership is typically associated with obligations, such as housing, disease prevention, and good pet ownership with implications for public health when pets are abused (William et al. 2002). Since pets and people live in the same environment, they serve as a significant reservoir for zoonotic infections (Kornblatt and Schantz 1980). It has been discovered that household pets directly contribute to the spread of zoonosis (Dada et al. 1979; Kornblatt and Schantz 1980). Most of the diseases that cats carry is zoonotic, or diseases that can spread from animals to people. Zoonotic diseases have been surfacing more frequently and are a threat for both human and wildlife populations (Jones et al. 2008).

Cats can infect people mechanically through bites and scratches, as well as enterically by contact with feces in soil or water or by introducing disease-carrying ectoparasites into the house. The relative risk of the diseases varies depending on whether the cat is an indoor-only cat, an indoor-outdoor pet cat allowed to roam freely, an outdoor cat owned by its owner who is free to roam, or a feral cat who practically has no interaction with humans. Due to their lack of contact with outdoor or feral cats, wild animals, or the environment, indoor cats are unlikely to be exposed to illness hazards. All cats that are either allowed to live outside or do so at a significantly higher risk of spreading disease. Due to a higher rate of vaccination and the ability to detect and cure infections, cats who are owned and receiving some level of veterinary care from their owners are probably less prone to contract diseases than purely feral cats. Rabies is one of the most dangerous diseases that cats can carry. When a rabid animal attacks a host animal, the virus is typically spread by saliva. Although the stereotype of a rabid dog is prevalent, rabies is currently more frequently found in cats than dogs in the US, possibly because of improved canine vaccination (Rupprecht 2002; Blanton et al. 2007). The most

frequent health risks of cats are cat viral infection or influenza, wound, animal bites and pet allergies, but a wide range of infections, including parasitic, bacterial., fungal., and viral disorders are also common.

Cats are kept as pets in increasing quantities in Dhaka than any other city in Bangladesh. Many people of Tejgaon metro in Dhaka city possess pet cats. A few studies in Bangladesh looked on the prevalence of clinical illnesses and diseases in cats. The use of medications, primarily antibiotics, in certain clinical circumstances in cats hasn't been thoroughly studied, though. In order to ascertain the frequency and prevalence of clinical disorders and the therapeutic medications used to treat them, particularly antibiotics in cats, the current study set out to do just that.As a result, the goal of this study was to ascertain the frequency of clinical disorders in cats at Tejgaon in Bangladesh's Dhaka district. The veterinary community and pet owners can utilize these statistics to help control various zoonotic diseases as well as to take the required preventive measures to control these illnesses in cats. These demographic details are crucial for this marketing strategy because the pet food, medication, and accessory businesses are also curious about where to focus their marketing campaigns.

2.Materials and Methods:

2.1: Study Area: The investigation was conducted in Dhaka`s Tejgaon Metro station. Tejgaon Thana (Dhaka metropolitan) covers an area of 2.74 square kilometers and is located between 23°44' and 23°46' north latitudes and 90°23' and 90°23' east longitudes. On the north, it is bordered by Kafrul, Cantonment, and Tejgaon industrial area thanas, on the south, it is bordered by Kala bagan and Ramna thanas, on the east, it is bordered by Tejgaon Industrial Area thana; and on the west, it is bordered by sher-e-banglanagar and kafrul thanas. Male 67439, female 51101, total population 118540. Administration this thana was established in the year 1953. When the Tejgaon Industrial Area Thana was founded on August 7, 2006, this thana was rebuilt.

Figure 1: Map of Dhaka city corporation area with Tejgaon metro

2.2 Data collection:

The study was conducted from February to April, Tejgaon Metro Livestock office in Dhaka, capital of Bangladesh. A total of 202cats were registeredof 200 cat owners from different zones of Tejgaon thana. Based on the owner's complaints, the animal's medical history, and the clinical indicators displayed by the patients, an examination of the registered diseased animal

was carried out. A thorough clinical evaluation was recorded on a hospital case record book and afterwards transferred to an Excel 2007 spreadsheet.

2.3 Complaints of the owner:

All the patients were first registered in the patient register book including date, age, sex, breed and complaint of the owners. Detailed clinical examinations of each of the patient were carried out. Vaccination history, travel history, diet history, environmental history, birth history.

2.4 Anamnesis/ Clinical history:

The clinical history of diseases was also collected from owners and recorded in the case record book though it is significant for causal factors of diseases. Physical examination of the patient Both distant and close inspection, palpation, percussion, and auscultation procedure followed through the standard procedure.

2.5 Clinical assessment:

Respiration rate, heart rate, pulse rate, temperature, body condition score, skin condition, etc. were measured using clinical examination equipment during a clinical examination of the patients.

2.6 Analytical statistics:

Using Microsoft Corporation's 2019 windows package, all data collected from TMLOwas organized, formatted, and evaluated. The data was entered into a Microsoft Excel spreadsheet and saved. The data was tabulated, and percentages were calculated to analyze it.

3. Result

A total of 202 cases of different clinical conditions were encountered during the study period 2022. Medicinal cases comprise highest percentage (83.17%) and vaccination and health checkup (16.83%). Among of the medicinal cases highest prevalence was found in cat viral infection (17.33%). Due to the lack of instruments and manpower, there is not available surgical care for cats. Prevalence of clinical diseases were found in skin problem (fungal infection 1.48%, allergic dermatitis 1%, dermatitis 4%, alopecia 2.48%), digestive system diseases (diarrhea due to both infectious and noninfectious cause 7.92%, gastritis 5.45%), respiratory diseases (pneumonia 7.43%), Eye diseases (eye disorder such as cataract, ulceration 1%, conjunctivitis 3.46%), parasitic infection (internal parasite infestation 6.93%, ecto parasite infection 1.98%), nutritional deficiency(5.45%), Dog bite(1.48%),Ear infection (2.48%), Injury (4.46%), Wound (body wound 2.97%. myiasis abscesses 1%, oral wound 1.98%), Fracture (0.49%) also found Mastitis (1%) and Urinary tract infection (3.96%). Table -1

Table 1. Prevalence of clinical conditions of cats admitted to the TMLO, inDhaka during February to April of 2022.

| Diseases	Frequency of Diseases	Prevalence (%)
Abscesses	1	0.49
Allergic dermatitis	2	1
Alopecia	5	2.48
Cat viral infection	35	17.33
Conjunctivitis	7	3.46
Dermatitis	4	1.98
Diarrhea	16	7.92
Dog bite	3	1.48
Ear Infection	5	2.48
Ecto parasite	4	1.98
Eye Disorder	2	1
Fracture	1	0.49
Fungal infection	3	1.48
Gastritis	11	5.45
Injury	9	4.46
Mastitis	2	1
Nutritional deficiency	11	5.45
Oral wound	4	1.98
Parasite infestation	14	6.93
Pneumonia	15	7.43
URTI	8	3.96
Vaccination	34	16.83
Wound	6	2.97
GrandTotal	202	100
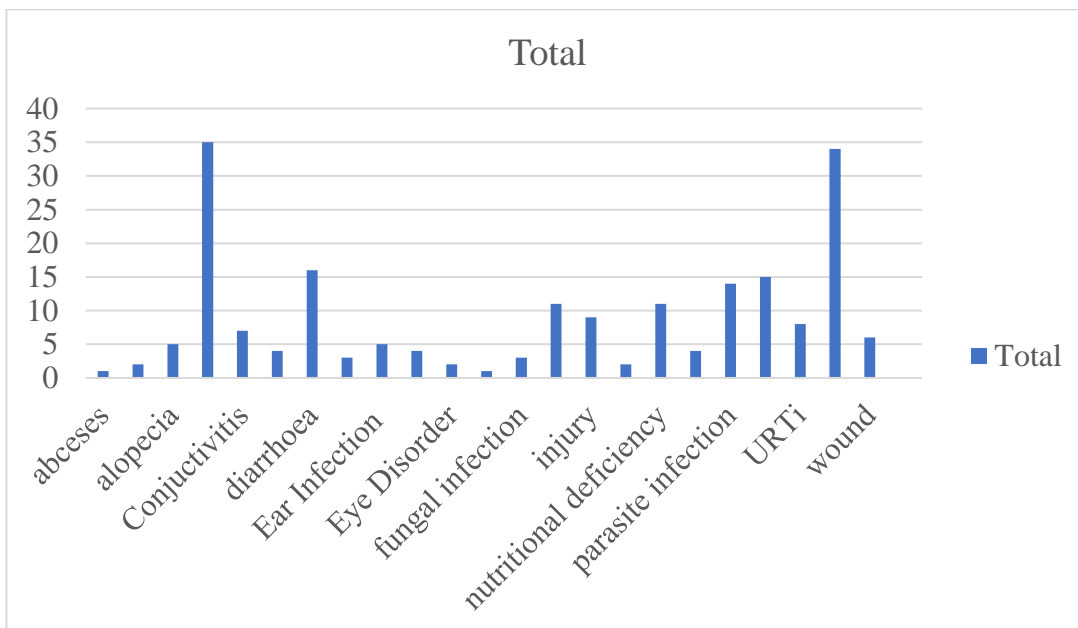
Fig.2 Prevalence of different clinical conditions during investigation period

Cats were divided into age groups as young (up to 12 months), adult (up to 36 months) and old (above 36 months). Results showed that the prevalence o8f clinical conditions in young age of cats (80.47%), adult ages (15.49%) and adult ages (4.03%) So that prevalence of clinical conditions was higher in young than others. Prevalence of clinical conditions cats according to age are shown in the Table-2.

Table 2: Prevalence of diseases according to age

| Age (months)	8 Days	10 days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	18	24	30	36	42	48	Total
Frequency	1	1	13	9	37	15	30	12	7	13	1	3	2	24	1	2	12	7	7	3	1	1	202
Prevalence (%)	0.49	0.49	6	4	18	7	15	6	3	6	.49	1	1	12	.49	1	6	3	3	1	.49	.49	100
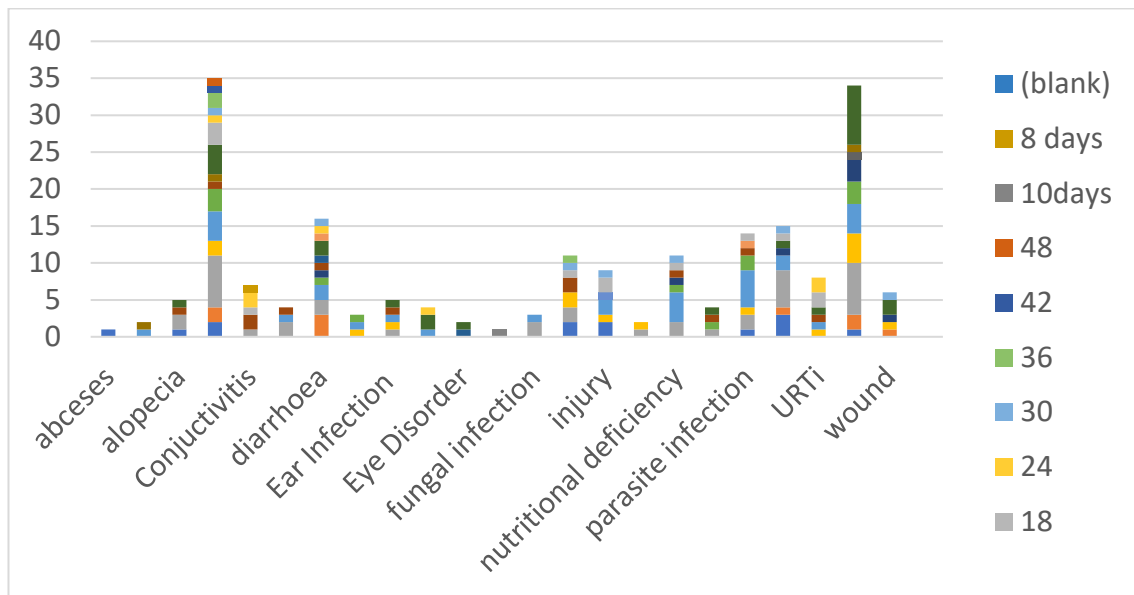
Figure 3: Frequency and prevalence of clinical condition of cats according to ages

Prevalence of clinical conditions in cats in relation with their sex revealed that highest number of female cats (53.46%) was admitted at TMLC. Male cats were 46.53%. Of the female cats, they had most cases of cat viral infection (10.4%) and vaccination case was found the most common case in male cats (8.42%).But there second most clinical case found was cat viral infection (6.93%) in male and vaccination (8.42%) in female cats. Table-3

Table 3: Frequency and prevalence of clinical conditions according to sex

	Female	Male	Total
Abscess	1(.49)		1
Allergic dermatitis	1(.49)	1(.49)	2
Alopecia	3(1.46)	2(1)	5
Cat viral infection	21(10.4)	14(6.93)	35
Conjunctivitis	5(2.48)	2(1)	7
Dermatitis	3(1.46)	1(.49)	4
Diarrhea	10(4.96)	6(2.97)	16
Dog bite	2(1)	1(.49)	3
Ear Infection	1(.49)	4(2)	5
Ecto parasite	3(1.46)	1(.49)	4
Eye Disorder	1(.49)	1(.49)	2
Fracture	1(.49)		1
Fungal infection	3(1.46)		3
Gastritis	5(2.48)	6(2.97)	11
Injury	3(1.46)	6(2.97)	9
Mastitis	2(1)		2
Nutritionaldeficiency	4(2)	7(3.47)	11
Oral wound	1(.49)	3(1.46)	4

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Parasite infection	5(2.48)	9(4.46)	14
Pneumonia	9(4.46)	6(2.97)	15
URTI	5(2.48)	3(1.46)	8
Vaccination	17(8.42)	17(8.42)	34
Wound	2(1)	4(2)	6
Total with prevalence	108(53.46%)	94(46.53%)	202
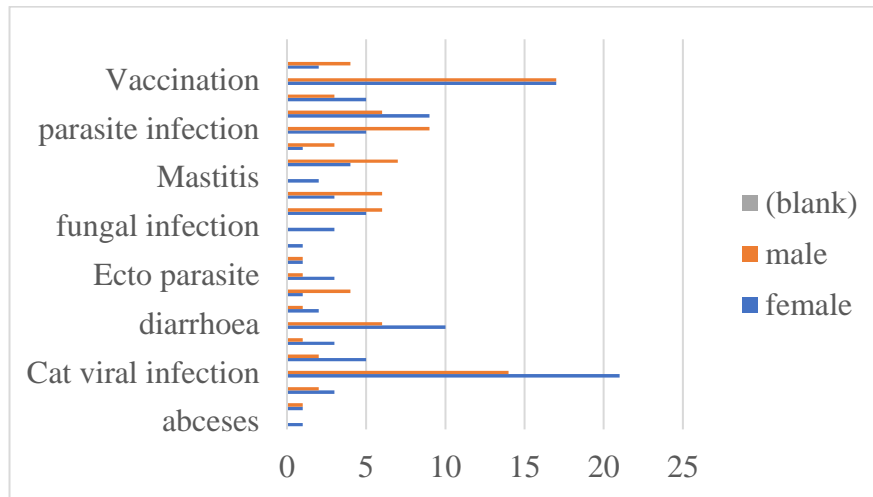
Figure4: Frequency and prevalence of clinical conditions according to sex

There are mainly three types of breed of cats were found during investigation period. They were most desi or indigenous breed (88.61%), then Persian (7.42%) and mixed breed (3.96%). Table-4

Table 4: Frequency and prevalence of clinical conditions according to breed

Breed	Indigenous	Mixed	Persian	Grand Total
Frequency	179	8	15	202
Prevalence	88.61	3.96	7.42	100
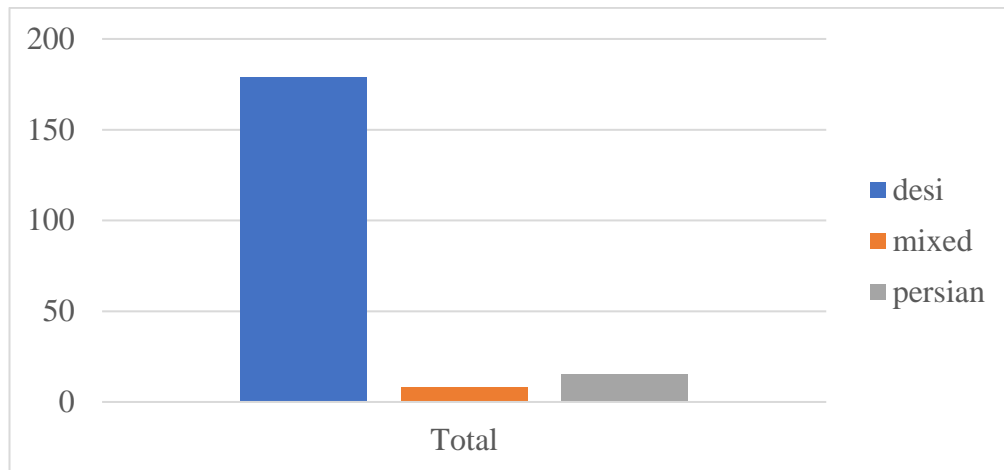
Figure 5: Prevalence of diseases according to breed

In our study, we found that mostly commonly used drugs are Ceftriaxone (20.43%). They mostly used different types of antibiotics like ciprofloxacin (11.88%), Amoxicillin (6.44%), Penicillin (3.47%), gentamycin (5%) etc. for infections and wounds. There are commonly used Helminticide-L (6.93%) as anthelmintic drugs and hydrogen per oxide solution (2.48%) used for ear mite or ear infection. Pain killers, respiratory medicines were also prescribed according to conditions.
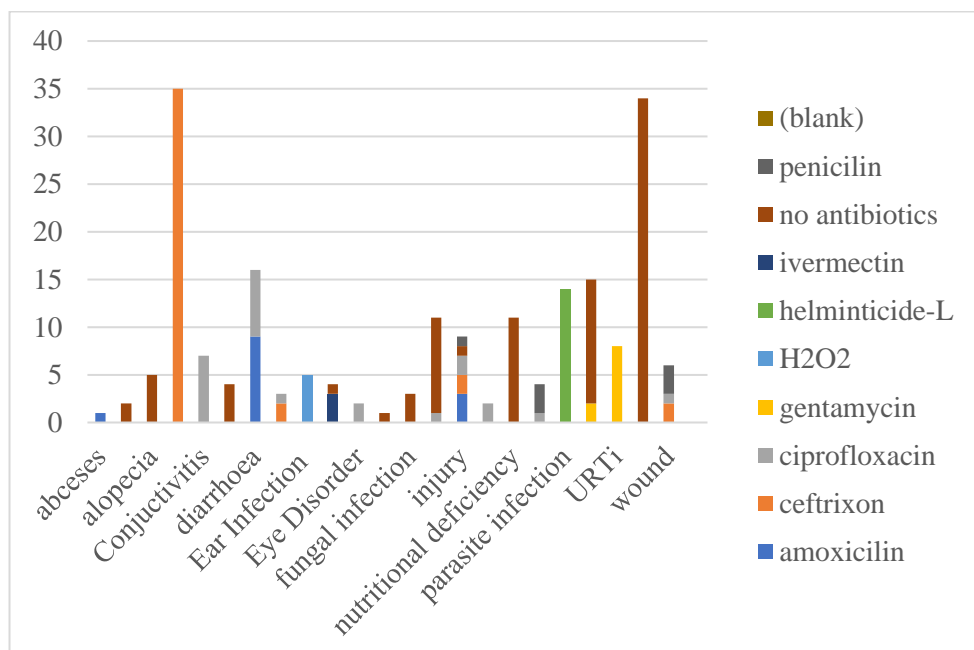
Figure 6: Use of therapeutic drugs on different clinical conditions of cats at TMLO, Dhaka

4.Discussion

In our study, most registered disease was cat viral infection (17.33%). There are different types of viral infections such as feline pan leukopenia, calci virus infection, cat influenza etc. According to record, mostly found cat viral diseases were feline pan leukopenia and cat flu or influenza. But this investigation is contrasted with the study of Parvez et al. (2014) and Hasib et al. (2015) where they found most found clinical cases was parasitic infection and that was third most prevalence in our study. Due to lack of cat viral vaccination and unprevailed cat rearing system cat viral infection are often found in these areas throughout the year. Lower prevalence of infectious diseases recorded by Freeman et al. (2006). Infectious diseases may result from bacterial., viral., parasitic, fungal and many other agents. This variation may be due to different geographical region and period. Due to the people's recent exposure to cat ownership as a pet, vaccination and checkup rates were relatively high (16.83%).

Recorded prevalence of skin disease was 6.96% agreed with the results of Samad (2010) and disagreed with the results of Freeman et al. (2006) and Chaudhari and Atsanda (2002) who reported lower prevalence 1.26 %. It may be caused by deficiency or overactivity of immune responses, hereditary, different bacterial., viral and parasitic agents and poor management. The reported prevalence of eye problem was 4.46% in cats, disagreed with results of Parvez et al. (2014) and Sarkar et al.(2015).For cats, the most common causes of eye infections are allergies and infectious organisms like calicivirus (FCV), herpes, and chlamydia. Other causes are foreign object or irritant in the eye like dirt or pollen, developed or congenital (from-birth) defect of the tear ducts, bacteria, viruses, fungusand parasites.

The prevalence of ectoparasitic diseases 1.98% was disagreed by the result of Parvez et al. (2014). It may be resulted from different arthropods, such as flea, lice, mice, mosquito etc. Fleas are significant vectors of various infections including pathogens and zoonotic infections. Present study showed that the prevalence of endoparasites diseases 6.93%, contrarily higher prevalence reported by Chaudhari and Atsanda (2002). It may be due to different endoparasites exposures and irregular deworming. Disease prevalence of the respiratory system in the present study was 7.43% in cats, contrasting with the results of Chaudhari and Atsanda (2002) who reported respiratory infection 12% in cats. Respiratory tract infections can be caused by viruses, bacteria and less often fungi and sometimes from faulty medication.

The reported prevalence of digestive disorder 13% which is like Sarkar et al. (2015). There are many causes of digestive disorder which includes abnormal eating, sudden change in diet, food allergies, parasitic infestation, bacterial and viral infectious agents. The prevalence of non-infectious diseases of this study was 11.89% disagreed with the results of Parvez et al. (2014) who recorded prevalence as 3.08% and Sarkar et al. (2015) also (5.78%). Noninfectious diseases arise from inside the body as a result of hereditary conditions or other causes, such as nutritional deficiencies, trauma, injury, dog bites, fracture etc. In our report, we also found mastitis, urinary tract infectionsetc. in admitted cats.

Prevalence of clinical conditions according to age group in this study was similarity with the results of Hasibet al. (2015). Local cat breed showed the most prevalence 88.61% and this result disagreed with Parvez et al. (2014) and Sarkaret al. (2015). Present study indicated 53.46% female and 46.54% male were admitted at TMLC with their clinical conditions. This indicates that the pet owner had their tendency to rear the female pet animals rather than male one which is not similar with the previous study of Parvezet al. (2014) and Sarkar et al. (2015).Vaccination and health checkup (16.83%) revealed the higher values than reported by Parvez et al. (2014) and Hasib et al. (2015).

Maximum patients were treated with antibiotics around 47% which is contracting with the report of Hasibet al. (2015). Cats were presented with a parasitic infestation, only deworming resulted in curing the patients. Among all antibiotics, mostly used antibiotic was ceftriaxone (20.3%) because this is useful for the treatment of cat viral infection which is most reported clinical conditions in our investigation. Another researcher reported that, in the case of moderate-to-severe wound infections, antibiotic ceftriaxone could be chosen. Moreover, ceftriaxone is the drug of choice for its easy administration, less ache with a price (Pennie et al.2004). One study reported that the most frequently prescribed antibiotics were Amoxicillin clavulanate (Wayneet al.2011).

5.Conclusion

According to age, sex, and breed, the study has provided a basic notion of the incidence of clinical diseases of cats in the study region. The high frequency and prevalence of diseases and disorders, however, is exacerbated by poor management, owners' ignorance, various topographic regions, locations, and environments. To develop preventive and control methods against these clinical disorders in Bangladesh, extensive investigations are required.

Furthermore, knowledge of medications, particularly antibiotics, might aid future studies in selecting the right antibiotics for clinical conditions.

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ACKNOWLEDGEMENTS:

BIOGRAPHY

I am Farzana Rahman, from Joypurhat. I passed Secondary School Certificate examination in 2014 and Higher Secondary Certificate examination in 2016. I am student of 22nd batch and now I am intern student under the Faculty of Veterinary Medicine in Chattagram Veterinary and Animal Sciences University. In future I would like to work in the field of veterinary medicine and research.