

**PREVALENCE AND POSTMORTEM STUDY OF  
NEWCASTLE DISEASE IN POULTRY AT UPAZILA  
GOVERNMENT VETERINARY HOSPITAL,  
NARSINGDI**



**Submitted By**

**MOHIMANUL ISLAM**

**Roll: 17/38**

**Reg. No: 01867**

**Intern ID: 30**

**Session: 2016-2017**

**A clinical report is submitted in partial satisfaction for  
the requirements of the Degree of  
Doctor of Veterinary Medicine (DVM)**

**Faculty of Veterinary Medicine  
Chattogram Veterinary and Animal Sciences University  
Khulshi, Chattogram-4225, Bangladesh**

**November, 2022**

**PREVALENCE AND POSTMORTEM STUDY OF  
NEWCASTLE DISEASE IN POULTRY AT UPAZILA  
GOVERNMENT VETERINARY HOSPITAL,  
NARSINGDI**



**A clinical report is submitted as per approved  
style and content**

**Signature of the Supervisor**

---

**Dr. Bhajan Chandra Das**

Professor

Department of Medicine and Surgery

**Faculty of Veterinary Medicine  
Chattogram Veterinary and Animal Sciences University  
Khulshi, Chattogram-4225, Bangladesh**

**November, 2022**

# CONTENTS

Contents	Page No.
<b>List of tables</b>	ii
<b>List of figures</b>	ii
<b>Abstract</b>	iii
<b>Chapter I: Introduction</b>	1-2
<b>Chapter II: Materials and methods</b>	
2.1 Study area	3
2.2 Duration of study	4
2.3 Sample size	4
2.4 Data collection	4
2.5 Physical examination	4-5
2.6 Postmortem examination	5
2.7 Clinical diagnosis	6
2.8 Statistical analysis	7
<b>Chapter III: Results</b>	
3.1 Prevalence of different poultry diseases at Upazila Government Veterinary Hospital, Narsingdi Sadar	8
3.2 Prevalence of Newcastle disease in different species	9
3.3 Prevalence of Newcastle disease based on age in different species	9
3.4 Prevalence of vaccination status of Newcastle disease	10
3.5 Prevalence of Newcastle disease according to gross postmortem lesions	10
3.6 Prevalence of record keeping on farms	11
<b>Chapter IV: Discussion</b>	
4.1 Prevalence of Newcastle disease in different species	12
3.3 Prevalence of Newcastle disease based on age in different species	13
3.4 Prevalence of vaccination status of Newcastle disease	13
3.5 Prevalence of Newcastle disease according to gross postmortem lesions	13
<b>Chapter V: Conclusions</b>	14
<b>Limitations</b>	15
<b>Acknowledgements</b>	16
<b>References</b>	17-19
<b>Questionnaire</b>	20
<b>Biography</b>	21

## List of Tables

<b>Table No.</b>	<b>Titles</b>	<b>Page No.</b>
Table 1	Prevalence of overall diseases of different poultry species	8
Table 2	Prevalence of Newcastle disease in chicken, pigeon and duck	9
Table 3	Prevalence of Newcastle disease based on age	9
Table 4	Prevalence of Newcastle disease according to gross postmortem lesions	10

## List of Figures

<b>Figure No.</b>	<b>Title</b>	<b>Page No.</b>
Figure 1	Map of the study area [Narsingdi Sadar upazila, Narsingdi, Bangladesh]	3
Figure 2	Weakness and drowsiness of pigeon	4
Figure 3	Torticollis of pigeon	4
Figure 4	Respiratory distress of layer	5
Figure 5	Greenish feces of Newcastle disease affected bird	5
Figure 6	Bending of neck in layer	5
Figure 7	Bending of neck in duck	5
Figure 8	Postmortem examination of chickens	5
Figure 9	Postmortem examination of duck	5
Figure 10	Hemorrhage in caecal tonsils	6
Figure 11	Hemorrhagic glands tip of proventriculus	6
Figure 12	Button ulcers in intestinal mucosa	6
Figure 13	Hemorrhagic & congested trachea	6
Figure 14	Prevalence of vaccination status of Newcastle disease.	10
Figure 15	Prevalence of farmers keeping records	11

## ABSTRACT

---

A study was conducted at Upazila Govt. Veterinary Hospital, Narsingdi Sadar, Bangladesh during the period of 17 February to 28 April 2022. The study's objectives included determining the prevalence of different poultry diseases and analyzing the prevalence of Newcastle disease (ND) in chicken, duck and pigeon at Narsingdi Sadar upazila, as well as assessing the prevalence of gross lesions in different internal organs by postmortem examinations. A total of 615 sick or dead bird cases were registered for disease diagnosis and treatment. The diseases were diagnosed based on clinical history, physical and postmortem examination. Among 615 number of cases, 16 different types of diseases were diagnosed. The common clinical symptoms included respiratory distress, torticollis, drowsiness, greenish diarrhea, and paralysis of the neck and wings were considered to diagnose Newcastle disease before postmortem examination. Newcastle disease was identified in highest 217 (35.3%) cases where the lowest 2 (0.3%) cases were identified as Infectious bronchitis. In chickens, pigeons and ducks, the estimated prevalence of Newcastle disease was 36.4%, 32.5%, and 20%, respectively. The prevalence of Newcastle disease in birds ranged from 25 to 37.5% in less than 3 months old, 9.1 to 33.3% in between 3 and 4 months old, and 0-53.6% in above 4 months old. Newcastle disease affects unvaccinated birds more than the vaccinated birds and the differences were statistically significant. In postmortem, haemorrhagic caecal tonsils and haemorrhage in tip of the gland of proventriculus are found in maximum Newcastle disease affected birds with greater percentage 86.6% and 79.7% respectively.

---

**Keywords:** Prevalence, Postmortem, Gross lesions, Age, Vaccination.

# CHAPTER I

## INTRODUCTION

Bangladesh's poultry business is essential to the country's rural socioeconomic system since it greatly supports economic growth while also generating a large number of employment possibilities. Poultry farming has historically been one of the most significant sources of income for rural women in Bangladesh, especially for landless and small-scale farmers (Paul et al., 1990). In recent years, the poultry-rearing industry has advanced significantly relative to other agricultural sectors. The total poultry population in Bangladesh is about 37.56 crore and the livestock sector generate employment directly and partially by 20% and 50% respectively (DLS, 2022). Over the past few years, commercial poultry farming has emerged as one of Bangladesh's most promising sectors. Numerous farmers switch to a new, commercial poultry rearing approach from their previous, traditional methods (Uddin et al., 2010).

Commercial poultry farming has been expanding quite quickly over the past few years, but a number of reasons have slowed this growth and increased chicken mortality (Badruzzaman et al., 2015). It is widely acknowledged that the development of the poultry sector is significantly hampered by poultry diseases (Karim, 2003). There are many diseases that affect poultry farmers and the flock's productivity. Due to the outbreak of several diseases, Bangladesh suffers an average annual loss of 30% of its poultry population (Ahmed & Hamid, 1991; Ali, 1994; Badruzzaman et al., 2015).

One of the main issues with Bangladesh's developing poultry sector is Newcastle disease (ND), commonly referred to as Ranikhet disease. Avian paramyxovirus serotype 1 (APMV-1) viruses, which are responsible for Newcastle disease, have been classified as belonging to the genus *Rubula* virus, subfamily *Paramyxovirinae*, and family *Paramyxoviridae* (Rima et al., 1995; Mayo, 2002). Due to its high prevalence and quick transmission through domestic and semi-domestic species of birds, Newcastle disease is a lethal viral disease of poultry.

Due to higher death rates, morbidity, distress, reduced egg production, and impaired hatchability, the disease results in significant economic losses (Alexander, 2000). One of the main issues preventing Bangladesh's poultry sector from developing is that the

infection still affects the country every year in the form of an epidemic and looks to be responsible for up to 40–60% of all poultry population mortality (Chowdhury et al., 1982).

A number of variables affect the incidence of diseases including the geographical area, farming methods, the farm's vaccination status, the biosecurity status of the farm etc (Abbas et al., 2015; Badruzzaman et al., 2015; Hassan et al., 2016). Along with the poultry species, the type of production, age, and sex have a big impact on prevalence of diseases (Yunus et al., 2009). Ucan and Cataloluk, (2002) reported that the prevalence of ND is higher in chickens than other birds. According to Ezeokoli et al. (1984), birds between the ages of 16 and 24 weeks were most susceptible to Newcastle disease. Barman et al., (2010) reported that non-vaccinated birds had a higher mortality rate than vaccinated birds.

One of the primary areas for raising poultry in Bangladesh is the Narsingdi district. Diseases, particularly the destructive Newcastle disease, are seen to be the biggest obstacle, which discourages chicken farmers from making investments in this sector. But not enough research has been done to produce a statistic that can accurately reflect the condition of this disease in our nation. Therefore, the present study aimed to investigate clinical ND through passive surveillance in Upazila Government Veterinary Hospital at Narsingdi Sadar. The results may help poultry consultants or researchers to develop and carry out priority-based research on this particular disease and to adopt effective control tactics against ND.

### **Objectives of the study:**

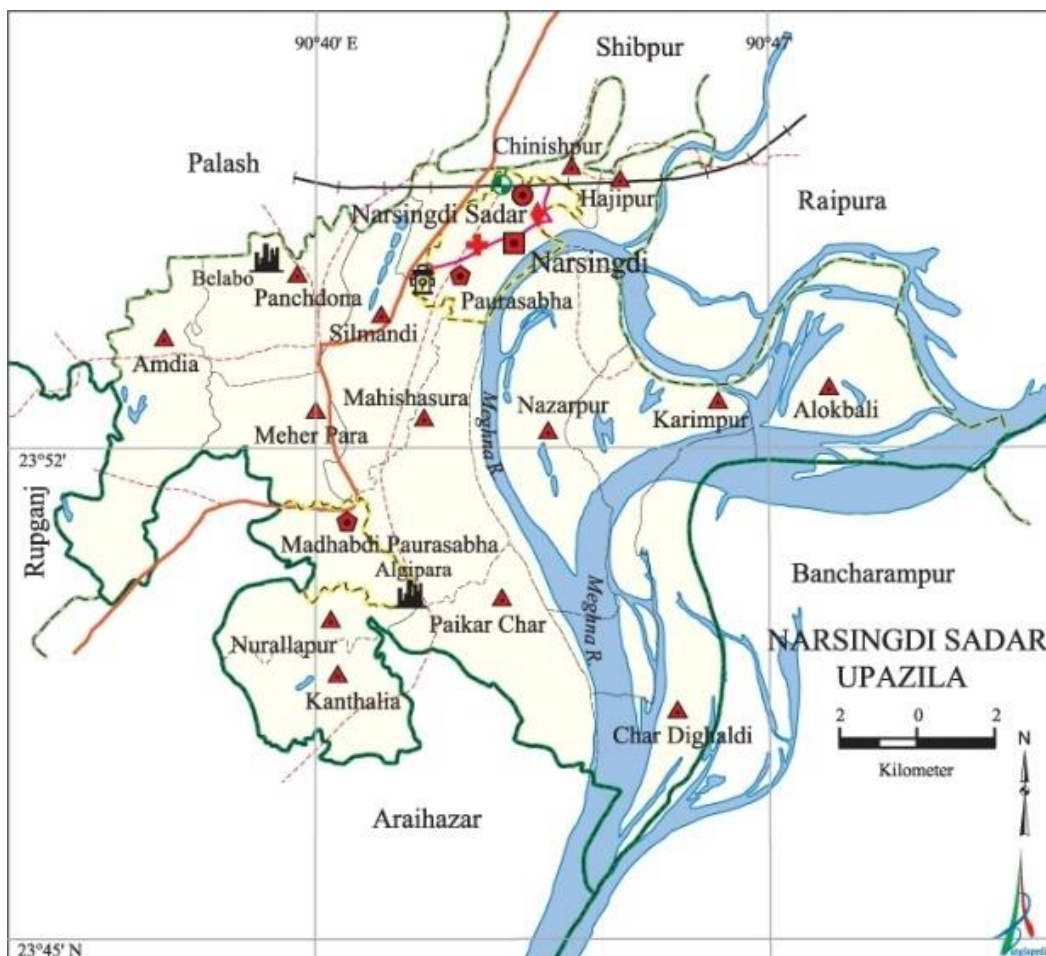
- To assess the prevalence of different poultry diseases at Narsingdi Sadar.
- To analysis the prevalence of Newcastle disease in chicken, duck and pigeon.
- To study postmortem lesions produced by Newcastle disease virus (NDV) in various organs of diseased and dead birds.

## CHAPTER II

### MATERIALS AND METHODS

#### 2.1 Study area

The study was conducted at Upazila Government Veterinary Hospital (UVH), Narsingdi Sadar, Bangladesh, which has 14 unions: Alokballi, Amdia, Char Dighaldi, Chinishpur, Hajipur, Karimpur, Khathalia, Mahishasura, Meherpara, Nazarpur, Nuralapur, Paikarchar, Panchdona, and Silmandi (Triangular red marks at Figure 1). These regions are highly recognized for poultry sector, and there are a lot of broiler and layer farms. In addition, people in these regions also raise other types of birds, including deshi chicken, pigeons and ducks. Figure 1 shows the map of the study area.



**Figure 1:** Map of the study area [Narsingdi Sadar, Narsingdi, Bangladesh].



## 2.2 Duration of study

The clinical study was conducted using an appropriate pre-designed questionnaire during the internship period at Upazila Government Veterinary Hospital (UVH), Narsingdi Sadar from 17 February 2022 to 28 April 2022.

## 2.3 Sample size

In total, 615 birds from various poultry farms in different locations of Narsingdi Sadar, either sick or dead birds were taken to the Upazila Government Veterinary Hospital (UVH) for disease diagnosis and treatment with consultancy during the study period.

## 2.4 Data collection

A structured questionnaire was used to collect information on each case, such as the species, age, breed, rearing system, clinical symptoms, vaccination history, flock size, morbidity, mortality rate and postmortem findings. Questionnaires were administered through face-to-face interviews with the poultry owners by oneself.

## 2.5 Physical examination:

In UVH, physical examination of sick birds was done before postmortem. The primary suspect for Newcastle disease was a bird that showed drowsiness (Figure 2), dyspnea, gasping (Figure 4), coughing, yellowish-white or greenish-white feces (Figure 5), twisting of the head and neck (Figure 3, 6, 7) and occasionally paralysis of the wings. ND cases were suspected based on the clinical symptoms using the methods followed by Hanif et al. (2016). Then Postmortem examination findings were used to confirm the diagnosis.



Figure 2: Weakness and drowsiness of pigeon



Figure 3: Torticollis of pigeon



Figure 4: Respiratory distress of layer



Figure 5: Greenish feces of ND affected bird



Figure 6: Bending of neck in layer



Figure 7: Bending of neck in duck

## 2.6 Postmortem examination:

Postmortem of sick and dead birds were done in a specific region at UVH. According to general guidelines for animal welfare, live birds were sacrificed before postmortem with the least amount of suffering. Postmortem examination was carried out in accordance with the guidelines and methods outlined in the Atlas of Avian Necropsy (Majó & Dolz, 2011) (Figure 8, 9). Personal safety was ensured during the postmortem to avoid contamination. The birds were thoroughly examined, and gross pathological lesions were noted and properly recorded. The necropsied birds were immediately dumped into the dumping pit after postmortem examination.



Figure 8: Postmortem examination of chickens



Figure 9: Postmortem examination of duck

## 2.7 Clinical diagnosis:

Due to the lack of laboratory support, the presumptive diagnosis of various diseases was determined using the clinical history of the population, the age of the sick birds, clinical symptoms and signs, gross and postmortem examination as mentioned in the Manual of Poultry Diseases (Brugere et al., 2015). The chief symptoms of ND were respiratory distress, torticollis, drowsiness, green to yellowish diarrhea, and a decrease in egg production (Munmun et al., 2016). The birds were diagnosed as clinically ND positive if they displayed the mentioned clinical symptoms as well as postmortem lesions of hemorrhage in the mucosal junction, caecal tonsils (Figure 10), gland of proventriculus (Figure 11), esophagus and air sac, necrotic foci lesion in the mucosa of the intestine (Button ulcer) (Figure 12) and hemorrhagic inflammation of the trachea (Figure 13).



Figure 10: Hemorrhage in caecal tonsils

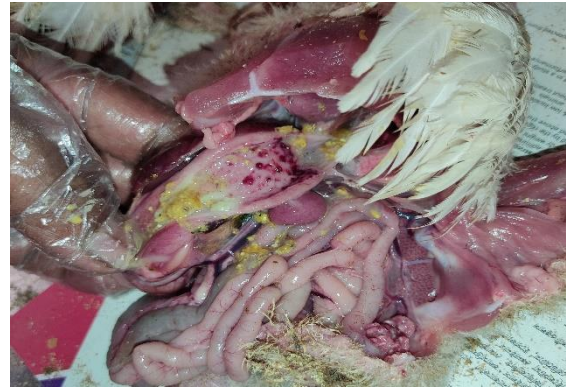


Figure 11: Hemorrhagic glands tip of proventriculus



Figure 12: Button ulcers in intestinal mucosa



Figure 13: Hemorrhagic & congested trachea

## **2.8 Statistical analysis**

Obtained data were sorted, coded and entered into MS-Excel 2021. Then the statistical analysis was done by using STATA (STATA version 14.2). Descriptive analysis was used to determine the prevalence based on various factors, including diseases, species, type, and age. The outcomes were displayed as percentages with a 95% confidence interval. The significant correlation between clinical poultry diseases and various variables was assessed using Fisher's exact test. An association was considered significant when the probability (P) value was less than 0.05.

## CHAPTER III

### RESULTS

#### 3.1 Prevalence of different poultry diseases at Upazila Government Veterinary Hospital, Narsingdi Sadar

Table 1 displays the overall prevalence of various poultry diseases. Among 16 diagnosed different diseases in poultry, Newcastle disease (ND) was higher (35.3%) than others. Duck viral hepatitis was less frequent in duck 0.7% than duck plague 2.6%.

**Table 1.** Prevalence of overall diseases of different poultry species.

Disease	Frequency	Percentage (%)
Newcastle disease	217	35.3
Colibacillosis	57	9.3
Infectious bursal disease	61	9.9
Aspergillosis	18	2.9
Avian influenza	46	7.5
Salmonellosis	10	1.6
Coccidiosis	33	5.3
Mycoplasmosis	38	6.2
Fowl cholera	11	1.8
Necrotic enteritis	25	4.1
Infectious coryza	4	0.7
Fowl pox	42	6.8
Infectious bronchitis	2	0.3
Duck Plague	16	2.6
Duck Viral Hepatitis	4	0.7
Pigeon Pox	31	5
<b>Total</b>	<b>615</b>	<b>100</b>

### 3.2 Prevalence of Newcastle disease in different species

In chickens, pigeons and ducks, the estimated proportionate prevalence of ND was 36.4%, 32.5%, and 20%, respectively. Comparing the proportionate prevalence of ND in the three species, chickens (36.4%) had a higher rate than either pigeons (32.5%) or ducks (20%) and the differences is statistically significant ( $p < 0.05$ ), as shown in Table 2.

**Table 2.** Prevalence of Newcastle disease in chicken, pigeon and duck.

Species	Cases	ND Frequency		Percentage (%)	p value
		(+)	(-)		
Chicken	510	186	324	36.4	
Pigeon	80	26	54	32.5	0.0097
Duck	25	5	20	20	
<b>Total</b>	615	217	398		

### 3.3 Prevalence of Newcastle disease based on age in different species

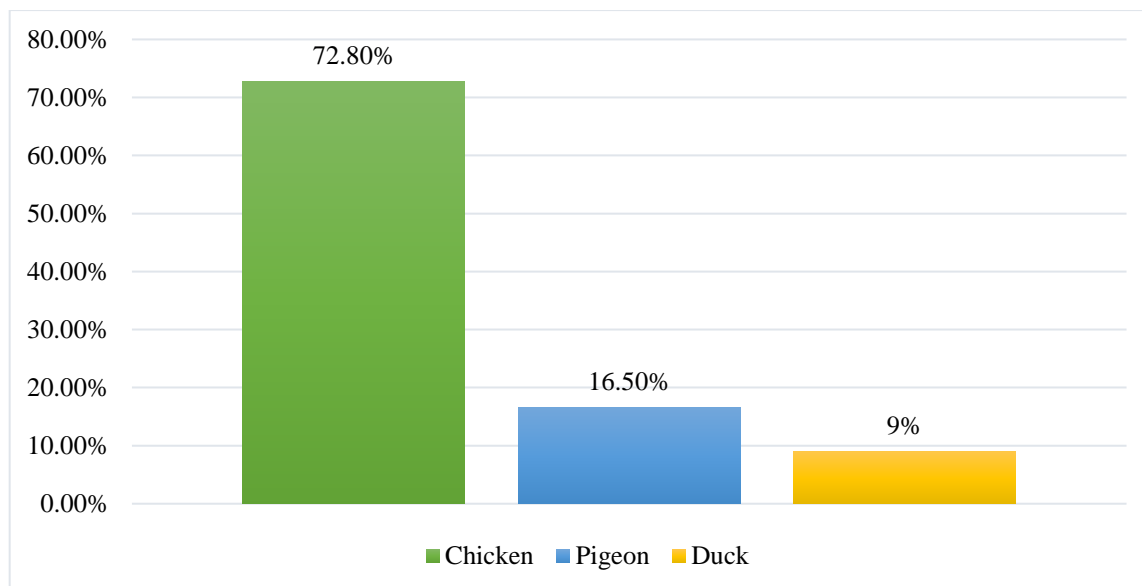
Table 3 displays the prevalence of Newcastle disease (ND) based on age in different species and revealed that the young birds frequently had greater ND frequencies than older birds. The frequency of ND ranged from 25 to 37.5% in younger than 3 months old, 9.1 to 33.3% in those between 3 and 4 months old, and 0-53.6% in those older than 4 months.

**Table 3.** Prevalence of Newcastle disease based on age.

Age	Chicken			Pigeon			Duck			P value
	N	(+)	(%)	N	(+)	(%)	N	(+)	(%)	
<3 months	360	135	37.5	26	8	30.8	8	2	25	
3-4 months	66	6	9.1	29	9	31	9	3	33.3	0.19
>4 months	84	45	53.6	25	9	36	8	0	0	
<b>Total</b>	510	186		80	26		25	5		

### 3.4 Prevalence of vaccination status of Newcastle disease

Figure 3 displays the prevalence of vaccination status of Newcastle disease and vaccination were found on 72.8% of chicken, 16.5% of pigeons, and 9% of duck cases throughout the study period.



**Figure 14.** Prevalence of vaccination status of Newcastle disease.

### 3.5 Prevalence of Newcastle disease according to gross postmortem lesions

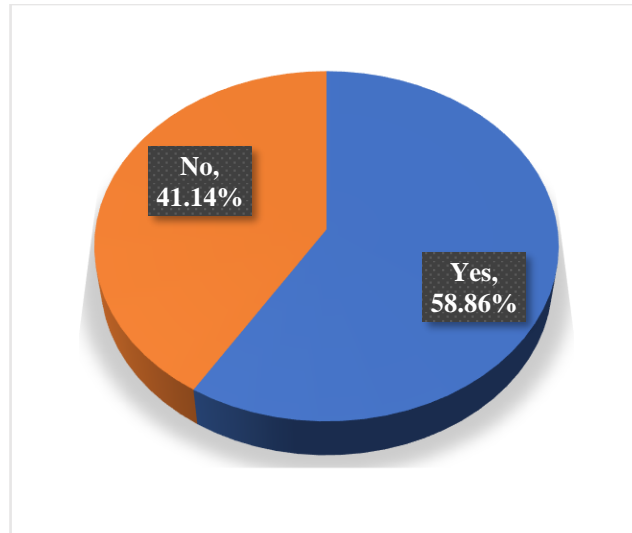
Table 4 displays the Prevalence of Newcastle disease according to gross postmortem lesions and revealed that haemorrhagic caecal tonsils and haemorrhage in tip of the gland of proventriculus are found in postmortem of maximum ND affected birds with greater percentage 86.6% and 79.7% respectively.

**Table 4.** Prevalence of Newcastle disease according to gross postmortem lesions.

Gross Lesions	No. of birds exhibit the lesions	Percentages (%)
Haemorrhagic caecal tonsils	188	86.6
Haemorrhage in tip of the gland of proventriculus	173	79.7
Congestion and edema in the lungs	126	58
Congestion in tracheal mucosa	147	67.7
Thickened proventriculus wall	54	24.9
Button ulcer in the intestinal mucosa	82	37.8

### 3.6 Prevalence of record keeping on farms

Figure 4 displays the prevalence of farmers that maintain farming records. From total 615 number of cases, regular farm records were recorded by 362 (58.86%) farmers; while the remaining 253 (41.14%) farmers were not kept any farm records.



**Figure 15:** Prevalence of farmers keeping records.



## CHAPTER IV

### DISCUSSION

#### 4.1 Prevalence of Newcastle disease in different species

Due to its high mortality and morbidity rates, Newcastle disease presents a threat to the chicken industry. According to reports, the majority of the country's poultry population experiences Newcastle disease in every year. Although the ND virus can infect a wide range of hosts but this study was done with only infected poultry, pigeons, and ducks. The ND occurrences were suspected because of common clinical symptoms which were respiratory distress (Figure 4), sneezing, coughing, torticollis (Figure 3, 6, 7), drowsiness (Figure 2), greenish-white diarrhea (Figure 5) and a decrease in egg production. These findings were very similar to those of Okoye et al. (2000). In this study, it was found that the birds had greenish diarrhea, which is another crucial indicator of ND (Alexander, 2000). The other symptoms, such as paralysis of the neck, wings and legs, are similar with the results of Das et al. (2018).

The study findings about poultry diseases are similar to earlier research done in Bangladesh (Badruzzaman et al., 2015; Uddin et al., 2010; Rahman et al., 2019; Rahman et al., 2017) and other nations like Nigeria and Pakistan (Abbas et al., 2015; Balami et al., 2014) except Newcastle disease occurrence which is found significantly higher (35.3%) than the observation of Hasan et al. (2010) and Das et al. (2018), where they reported 14.89% and 8.9%, respectively. This could be due to a smaller sample size, geographic variation, weather conditions, species variation, management fault, etc.

The proportionate prevalence of ND in this study, 36.4% in chicken, 32.5% in pigeons and 20% in ducks which is matched with previous study (Asadullah, 1992). The prevalence of ND is higher in chickens than other birds due to its vast population and housing them together may possibly be a contributing factor (Ucan and Cataloluk, 2002).

## **4.2 Prevalence of Newcastle disease based on age in different species**

Although ND can strike at any stage of life, as a bird gets older, it gradually develops a strong immunity to it. Generally, Young birds are typically more vulnerable to ND. This study findings showed that the frequency of ND ranged from 25 to 37.5% in younger than 3 months old, 9.1 to 33.3% in those between 3 and 4 months old, and 0-53.6% in those older than 4 months. This result is matches with a Nigerian study that found that birds between the ages of 16 and 24 weeks were most susceptible to the Newcastle disease virus infection in backyard management systems (Ezeokoli et al., 1984).

## **4.3 Prevalence of vaccination status of Newcastle disease**

In this study, vaccination against ND were found on 72.8% of chicken, 16.5% of pigeons, and 9% of duck cases and revealed that ND affects unvaccinated birds more than the vaccinated birds. But, a small percentage of vaccinated birds developed ND, which may have been caused by failure of vaccine, improper timing of immunization, the presence of other concurrent infections, or stress-related conditions. Compared to vaccinated birds, mortality was 1.5 times higher in non-vaccinated birds (Barman et al., 2010). If the flock has already received any short of ND vaccine, ND killed vaccine may increase the protective titre level of the flock against ND quickly. Ultimately, it might lower the flock's mortality rate from ND (Munmun et al., 2016).

## **4.4 Prevalence of Newcastle disease according to gross postmortem lesions**

Table 4 displays the percentages of the most prevalent gross lesions discovered in various organs during the postmortem examination. In this study, the gross pathological lesions are slight to severe haemorrhages in tip of the glands of proventriculus, haemorrhage in caecal tonsils (Figure 11, 12). These lesions are similar with the observation of Mishra et al. (2000) and Okoye et al. (2000) reported that typical lesions include proventricular hemorrhage, which is most frequently found on the surface of the ventriculus near the junction and haemorrhage in caecal tonsils and intestine, which supports with the findings of Jungherr and Hanson, (2004). Kianizadeh et al. (2002) reported that intestinal wall contains hemorrhagic lesions are associated with necrosis (Button ulcer) (Figure 13).

## **CHAPTER V**

### **CONCLUSIONS**

The findings of this study suggest that Newcastle disease (ND) is a significant issue in poultry sector at Narsingdi Sadar upazila of Narsingdi district, Bangladesh. The prevalence of ND is significantly influenced by various species, their ages, and immunization status. Postmortem findings revealed that major internal organs of birds are greatly affected by ND, which causes severe mortality in poultry. The primary requirement for a great improvement in poultry productivity is the controlling of ND by routine immunization and preventive measures. In order to develop prevention and control measures, it is essential to have up-to-date research about the epidemiology of ND in birds. Further improved data collection and analysis can be done to better understand the ecology and epidemiology of ND in these regions.

## **LIMITATIONS**

The study was carried out on a small scale, in a limited geographic area, and during a short period of time, which may not have been representative. Then, there are no histopathological, molecular or serological test was used to detect ND. So that only presumptive diagnosis was done without any confirmatory diagnosis.

## ACKNOWLEDGEMENTS

I consider it my utmost obligation to express my gratitude to the **Almighty**, the omnipresent, kind and merciful who gave me the health, thoughts and the opportunity to complete this task.

Then I would like to express my deepest appreciation to all those who provided me the possibility to complete this report. Without the many person's generous assistance and support, it would not have been possible.

I would really like to express my gratitude to my supervisor, **Professor Dr. Bhajan Chandra Das**, Department of Medicine and Surgery, Faculty of Veterinary Medicine, Chattogram Veterinary and Animal Sciences University. My heartfelt thanks to him for academic guidance, generous supervision, precious advice, constant inspiration, radical investigation and effective judgments in all steps of the study.

I also want to express my sincere appreciation and gratitude to Professor **Professor Dr. Gautam Buddha Das**, honorable vice chancellor; **Professor Dr. A.K.M. Saifuddin**, director, external affairs and **Professor Dr. Mohammad Alamgir Hossain**, Dean, Faculty of Veterinary Medicine, CVASU for arranging this type of report work as a compulsory part of this internship program.

Many people, especially my classmates and seniors have made valuable comment suggestions on my report which gave me an inspiration to improve the quality of the report.

Finally, I am grateful to all the farm owners, well-wishers, friends and family members for their endless sympathies, kind co-operation, sacrifices and prayers.

**The Author**

## REFERENCES

- Abbas, G., Khan, S. H., Hassan, M., Mahmood, S., Naz, S., & Gilani, S. S. (2015). Incidence of poultry diseases in different seasons in Khushab district, Pakistan. *Journal of Advanced Veterinary and Animal Research*, 2(2), 141-145.
- Ahmed, S., & Hamid, M. A. (1991). Status of poultry production and development strategy in Bangladesh. In *Workshop on Livestock Development in Bangladesh, Savar, Dhaka (Bangladesh), 16-18 Jul 1991*. BLRI.
- Alexander, D. J. (2000). Newcastle disease and other avian paramyxoviruses. *Revue Scientifique et Technique-Office International des Epizooties*, 19(2), 443-462.
- Ali, M. J. (1994). Current status of veterinary biologics production in Bangladesh and their quality control. In *Proceedings of the BSVER symposium held on July* (Vol. 28, No. 1994, pp. 4-7).
- Asadullah, M. (1992). Village chickens and Newcastle disease in Bangladesh. *Newcastle disease in village chickens: control with thermo stable oral vaccines. ACIAR Proceedings*, (39).
- Badruzzaman, A. T. M., Noor, M., Mamun, M. A. L., Husna, A., Islam, K. M., Alam, K. J., & Rahman, M. M. (2015). Prevalence of diseases in commercial chickens at Sylhet Division of Bangladesh. *International Clinical Pathology Journal*, 1(5), 00023.
- Balami, A. G., Ndahi, J. J., Zaifada, A. U., Mustapha, M., Jarafu, D. J., Asogwa, N. T., & Hajara, S. (2014). A retrospective study of poultry diseases diagnosed in Maiduguri, North-East, Nigeria. *Poultry, Fisheries & Wildlife Sciences*, 2(1), 113.
- Barman, L. R., Flensburg, M. F., Permin, A., Madsen, M., & Islam, M. R. (2010). A controlled study to assess the effects of vaccination against Newcastle disease in village chickens. *Bangladesh Veterinarian*, 27(2), 56-61.
- Brugere, J. P., Vaillancourt, J. P., Shivaprasad, H. L., Venne, D., & Bouzouaia, M. (2015). *Manual of Poultry Diseases*. Paris, France: France Association for the Advancement of Science.
- Chowdhury, S. I., Chowdhury, T., Sarker, A. J., Amin, M. M., & Hossain, W. (1982). The role of residual maternal antibody on immune response and selection of an optimum age for primary vaccination of chicks. *Studies on Newcastle disease in Bangladesh*, 12-22.
- Das, A., Ghosh, P., Sen, A., Das, A., & Chowdhury, S. (2018). A retrospective analysis of prevalence of Newcastle disease and infectious bursal disease in poultry at Kishoreganj. *Bangladesh. Journal of Veterinary Medicine and Health*, 2(2), 108.
- DLS. (2022). *Livestock Economy At A Glance*. Dhaka: Department of Livestock Services, Government of the People Republic of Bangladesh.

- Ezeokoli, C. D., Umoh, J. U., Adesiyun, A. A., & Abdu, P. (1984). Prevalence of Newcastle disease virus antibodies in local and exotic chicken under different management systems in Nigeria. *Bulletin of animal health and production in Africa*, 32(3), 253-257.
- Hanif, S. M., Meher, M. M., & Anower, M. (2016). Field study on efficacy of red pepper (capsicum annum) along with antibiotics against newcastle disease in broiler at Narail Sadar Upazilla, Bangladesh. *Wayamba Journal of Animal Science*, 8, 1460-1466.
- Hasan, A. R., Ali, M. H., Siddique, M. P., Rahman, M. M., & Islam, M. A. (2010). Clinical and laboratory diagnoses of newcastle and infectious bursal diseases of chickens. *Bangladesh Journal of Veterinary Medicine*, 8(2), 131-140.
- Hassan, M. K., Kabir, M. H., Al Hasan, M. A., Sultana, S., Khokon, M. S. I., & Kabir, S. L. (2016). Prevalence of poultry diseases in Gazipur district of Bangladesh. *Asian Journal of Medical and Biological Research*, 2(1), 107-112.
- Jungherr, E. L., & Hanson, R. P. (2004). Pathogenicity of NDV for the chicken. *Newcastle Disease virus. An evolving Pathogens. University, of Wisconsin, Medison*, 257-272.
- Karim, M. J. (2003). Current disease pattern in poultry with special emphasis on parasites and their methods of control. In *Proceeding of the 3rd International Poultry Show and Seminar of World Poultry Science Association-Bangladesh Branch. BCFCC, Dhaka, Bangladesh* (pp. 119-123).
- Kianizadeh, M., Aini, I., & Gholami, G. R. (2002). A comparative study on histopathologic effects of Iranian Newcastle disease virus isolates. *Archives of Razi Institute*, 54, 17-29.
- Majó, N., & Dolz, R. (2011). *Atlas of Avian Necropsy*. Spain: Servet Veterinary Publishing Company.
- Mayo, M. (2002). A summary of taxonomic changes recently approved by ICTV. *Archives of virology*, 147(8), 1655-1656.
- Mishra, S., Kataria, J. M., Sah, R. L., Verma, K. C., & Mishra, J. P. (2000). Pathogenesis of Newcastle disease virus isolates in pigeon. *Indian Journal of Animal Sciences*, 70(11), 1125-1126.
- Munmun, T., Islam, K. M. F., Jalal, S., Das, T., Tofazzol, R., Islam, K., & Alam, R. (2016). Investigation of proportionate prevalence of Newcastle disease in chicken, pigeon and duck at selected veterinary hospitals in Bangladesh and India. *Journal of Dairy Veterinary and Animal Research*, 4(2), 00118.
- Okoye, J. O. A., Agu, A. O., Chineme, C. N., & Echeonwu, G. O. N. (2000). Pathological characterization in chickens of a velogenic Newcastle disease virus isolated from guinea fowl. *Revue d'élevage et de médecine vétérinaire des pays tropicaux*, 53(4), 325-330.

- Paul, D. C., Haque, M. F., Abedin, M. Z., & Akter, M. S. (1990). Participation of women in poultry husbandry in rural Bangladesh. In *10th AFRSE symposium held at machining university, USA, during* (pp. 14-17).
- Rahman, M., Abdullah, M., Sayeed, M., Rashid, M., Mahmud, R., Belgrad, J. P., & Hoque, M. (2019). Epidemiological assessment of clinical poultry cases through the government veterinary hospital-based passive surveillance system in Bangladesh: a case study. *Tropical animal health and production*, *51*(4), 967-975.
- Rahman, M. A., Rahman, M. M., Moonmoon, M., Alam, K. J., & Islam, M. Z. (2017). Prevalence of common diseases of broiler and layer at Gazipur district in Bangladesh. *Asian Journal of Medical and Biological Research*, *3*(2), 290-293.
- Rima, B. K., Alexander, D. J., Billeter, M. A., Collins, P. L., Kingsbury, D. W., Lipkind, M. A., Nagai, Y. O., Rvell, C., Pringle, CR & ter Meulen, V. (1995). The Paramyxoviridae. *Virus Taxonomy. Sixth Report of the International Committee on Taxonomy of Viruses*, 268-274.
- Ucan, U. S., & Çataloluk, O. (2002). Housing Quails and Chickens Together is the Possible Cause of Newcastle Disease's Spread: An Overlooked Measure Taken to Prevent the Disease. *Turkish Journal of Veterinary & Animal Sciences*, *26*(2), 419-420.
- Uddin, M. B., Ahmed, S. S. U., Hassan, M. M., Khan, S. A., & Mamun, M. A. (2010). Prevalence of poultry diseases at Narsingdi, Bangladesh. *International Journal of Biological Research*, *1*(6), 09-13.
- Yunus, A. W., Nasir, M. K., Aziz, T., & Böhm, J. (2009). Prevalence of poultry diseases in district Chakwal and their interaction with mycotoxicosis: 2. Effects of season and feed. *Journal of Animal and Plant Sciences*, *19*(1), 1-5.



# QUESTIONNAIRE

## Objectives:

- To know the prevalence of Newcastle disease
- To study the pathological lesions produced by NDV

**Date:** ...../...../2022

## Owner's name:

**Case type:**   Chicken      Pigeon      Duck

## Location:

### A) Poultry population:

1. Total number of poultry: .....
2. Age: .....

### B) Farm structure:

1. Housing System: Intensive      Semi-intensive      Free range
2. Shed number:

### C) Vaccination status:

1. Do you vaccinate your poultry against ND? Yes      No
2. Vaccination schedule: .....

### D) Disease:

1. Outbreak: Yes      No
2. Clinical signs: .....
3. Number of birds affected: .....
4. Number of dead birds: .....

### E) Disease prevention practices:

1. Bio-security measures: .....

### F) Record keeping: Yes      No

### G) Postmortem findings:

- i. ....
- ii. ....
- iii. ....
- iv. ....

## BIOGRAPHY



**Mohimanul Islam**, Son of **Aminul Islam** and **Masuda Akter**, was born on 21 February, 1997 at Narsingdi district. He passed his Secondary School Certificate Examination from Brahmondi K. K. M. Govt. High School, Narsingdi in 2013 (GPA 5.00). Then he passed his Higher Secondary School certificate examination from Narsingdi Govt. College, Narsingdi in 2015 (GPA 5.00). Now he is completing his one-year long internship program for fulfilling the requirement of Doctor of Veterinary Medicine (DVM) degree in Chattogram Veterinary and Animal Sciences University, Chattogram, Bangladesh. During his internship period he received his clinical training on Veterinary Medicine from CVASU Lab Rotation, Shahedul Alam Quadery Teaching Veterinary Hospital (SAQTVH), PRTC, Teaching & Training Pet Hospital and Research Center (TTPHRC), UVH Narsingdi Sadar, Central Veterinary Hospital, Central Disease Investigation Laboratory, Livestock Research Institute, Central Cattle Breeding and Dairy Farm, ACIDI/VOCA, RV & F Depot, Chattogram Military Farm, Chattogram Zoo, Bangladesh National Zoo, management training from Research and Farm Based Campus (CVASU) and Privet Pet Clinic & Medicine Shop etc.

His primary research interest is in veterinary public health, microbiology, zoonoses and poultry diseases. But he feels much interest to work on emerging infectious diseases of different animals.