

Newcastle Disease In Poultry, Its Diagnosis, Prevention And Control Strategies

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Abstract–Newcastle disease (ND) is a major cause severe illness in poultry birds and other wild species of bird, harshly effecting the poultry industry by mortality of many birds in result becoming cause of loss of industry. ND is very common in Asia especially Pakistan, India and Bangladesh. The cause of this disease is a virus which belongs to family Paramyxoviridae named as Avian avulavirus 1. It has different strain which is categories on the basis of their virulence. In this study we describe the new castle disease and its causes, prevention and cure as well as vaccines and immunization procedures, and also describe how can we recover our birds through different methods. Because the industrious, social, financial, communal, and environmental situations that enable endemicity of poultry in Pakistan and other developing countries of world, furthermost of the difficulties and control methods are explained here. As we know there is no specific treatment we gave a method to minimize mortality due to ND we increased the quantitative life by adopting some measures.

Keywords :Newcastle disease, Immunization, Evolution, Disease control

1. INTRODUCTION

Introduction to disease:

Newcastle or ND is a contagious disease of avian group which infect hen and other species of poultry [1]. Some signs of this disease are Greenish Diarrhea, Nervous and respiratory problems. Severity of virus will depend upon the strain and immunity of bird [2]. Incubation period have 2-15 days[3].

Cause of disease:

NDV belongs to the family named as Paramyxoviridae sub family avulavirus [4]. It is RNA virus. NDV is classified in to three groups on the basis of Virulence [5]

- Lentogenic(Less virulent)
- Mesogenic(higher virulent then Lentogenic)
- Valogenic (Higher virulent than both of above)

Velogens and mesogens are also called virulent NDV as Lentogenic is less virulent areas where vaccination with live vaccine was practiced less case were reported [6]. NDV have high mortality and high morbidity rate [7]. Most of mortality occur due to poor respiration dehydration and anorexia. Virulence of virus, immunity of specie will decide how much sever disease [8]. Mostly chickens are effected by the virus while water fowl are least effected by the NDV[9].

Effect of different Strains of virus on birds

Lentogenic: Effect on lungs, Mild respiratory signs, Illness, Effect young birds, 5 to 10% mortality [10]. Mesogenic: Nervous signs and 50-98% Mortality [11] : Virus effects Gut and 100% Mortality [12]

Spreading Of Disease

ND commonly effect Asia, Africa, and some countries of North and South America [13]. Some other countries as USA and Canada, there is no strains of ND as they control ND by destroying those birds which are effected by the New castle disease virus [14]. Commonly Pigeon and other imported birds are commonly effected by NDV and they would be also source of spreading Velogenic and mesogenic [15]. Some birds like water fowl are infected by low virulence. If bird is infected with low virulent strain of virus it will minimize the production of bird [16]. Virus can be transmitted through air, nasal discharges, and feces of poultry birds [17]. Virus can be transmitted in egg so it would be vertically transmitted disease as virus may also present in the egg which is laid by the chicken and after hatching it would affect young chicken [18]. NDV can transmitted in chicken by food and water which are contaminated by the virus as disease is contagious so it may transfer through birds to birds [19]. Feces of infected bird is also the source of the virus. Movement of contaminated persons in the shed may cause spreading of NDV in the shed [20].

Clinical Signs

Watery discharge from eyes, Conjunctivitis, Cough and rales, Sneezing, Gasping, Low egg production, Change in egg color and shape, Greenish diarrhea, Paralysis of leg and wings later droopy wings and lameness, Higher rate of Mortality and morbidity, Swelling of Head and torticollis neck and spasms [21,22,23].

Lesions:

Prominent lesion are usually seen in valogenic Newcastle disease [24]. Pinpoint hemorrhages on proventriculus gland [25]. Egg like hemorrhage are usually seen. Conjusted Lungs, Hemorrhage on cecal gland, Ovaries Testes Kidneys are badly effected [26].

2. MATERIAL AND METHODS

(a) How to find out Disease

[Hemagglutination](#) test [27], Postmortem PCR, Virus can be isolated by Cloacal Swab and then can be tested [28]

(b) Control:-

In this research we will tell you have we can control the prevalence of New castle disease as above detail show that new castle disease is very dangerous which may also cause high mortality rate [29,30]. So we can control the spreading of new castle disease by adapting following measures There two methods to control the disease

Vaccination and Biosecurity Management [30]

Vaccination

Vaccination of ND through live vaccine should be done as it will prevent the ND. There would two dose must in order to provide immunity to the bid.

Biosecurity managements

- We should follow the strict rule for bio security.
- No one from outside should enter in the shed.
- Use sanitized equipment.
- Always use one time needle and sanitized needle while doing vaccine.
- Disinfectant should use.

Method

The study was collected in farm situated at Navab Pur Multan. In this study we use three methods in order to control ND. We made three groups of chicks

Group A We rear 30 chicks Supporting Therapy done

Group B We rear 30 chicks only use multi vitamins.

Group C We rear 30 chicks Flushing, Multivitamins and Supporting therapy

3. RESULT

In Group A only 3 chicks remain alive after 14 days

In Group B 7 chicks remain Alive after 14 days

IN group C 13 chicks remain Alive after 14 days



Figure 1 recovered chicks from ND

4. CONCLUSION

By adopting above mentioned technique we can minimize the mortality rate and by following control measures we can save our flock from ND

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