

NEWCASTLE DISEASE

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ETIOLOGY: *Paramyxo virus.*, RNA Virus.

- ✓ First time recorded in New castle in 1926 in England and in Ranikhet in 1928 in Uttaranchal(India).
- ✓ It occurs throughout the year, but is most common in the summer.
- ✓ On the basis of virulence:
 1. LENTOGENIC VIRUS(MILD).
 2. MESOGENIC VIRUS(MODERATE).
 3. VELOGENIC VIRUS(SEVERE).
- ❖ ***ND disease confused with Avian influenza :***
 - ✓ Avian influenza virus-HA-Rabbit but ND doesn't.
 - ✓ Avian influenza virus doesn't produce disease in pigeons but ND can.
 - ✓ ND Virus losses its HA activity at at5,90,180 minutes but pathogenicity lost at 180 minutes but AI Virus become non-infectious before HA property of the virus is lost.

HOST : In poultry(virulent form), but in ducks, turkey, wild birds and pheasants have less severe form of disease.

SPREAD :

- ✓ Inhalation and Ingestion.
- ✓ Feed, Water and Equipments.
- ✓ Movement of people.
- ✓ Air transmission is very important.
- ✓ *In Humans, the virus causes conjunctivitis, headache and influenza like symptoms.*

SYMPTOMS :

❖ ***In velogenic form :***

- ✓ Depression
- ✓ Closed eyes and facial swelling.
- ✓ Drooping wings and anorexia with greenish/yellowish diarrhea.
- ✓ Some times in neural form--- Torticollis, incoordination or even paralysis of legs and arched back position of the body.



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Paralysis of legs



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Torticollis



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Abnormal perching reflex

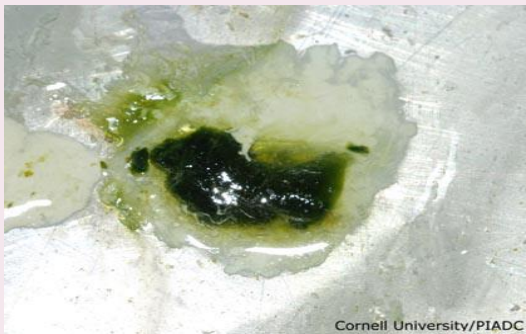


Coughing and gasping



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Edema(Head),Conjunctivitis
, Cornea edema(Eye)



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Greenish diarrhea



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Greenish diarrhea
with white urates

❖ ***In mesogenic form :***

- ✓ Severe respiratory distress.
- ✓ Marked drop in egg production.
- ✓ Some times soft shelled egg or shell less egg.

❖ ***In lentogenic form:***

- ✓ Only mild respiratory distress.

DIAGNOSIS :

- ✓ Isolation of virus.

- ✓ P.M finding :

1. Pin point haemorrhage in proventriculus.
2. Enlarged and haemorrhagic caecal tonsil.
3. Intestinal haemorrhage in intestinal wall.
4. Necrotic spleen.

- ✓ Serological test :

1. H I Test
2. ELISA Test
3. CFT Test
4. V N Test.

- ✓ Biological test :

1. Inoculation --- Pigeon-----Produce disease in 6 day.
2. Immunized Poultry-----not produce disease where as unimmunized poultry----- produce disease.

PM FINDINGS



Fig 1: Proventriculus shows edematous glands with some areas of hemorrhages.



Fig 2: Caecal tonsils with necrosis and marked hemorrhagic lesions



Fig 3 : Severe hemorrhages on caecal tonsils and mucosa of the rectum.



Fig 4 : Entire length of intestinal mucosa shows hemorrhagic changes.

TREATMENT: No treatment

PREVENTION AND CONTROL :

- ✓ Good hygiene, good management, and good biosecurity practices.
- ✓ Along with vaccination.
 - There are 3 types of commercially available vaccines for RD disease:

1. *Live lentogenic vaccines:*

- ✓ They have F, Hitchner B1, LaSota and V4 vaccines.
- ✓ Least harmful vaccines(LaSota and B1 most widely used).
- ✓ Of these F has lowest disease producing power.
- ✓ LaSota is not used for first vaccination but often as a booster after one or more B1 strain/ F strain vaccines.
- ✓ Given by eye drop, drinking water or by machine producing spray.

2. Live mesogenic vaccines:

- ✓ They are Mukteswar (R2b), Roakin, Komarow, and H (Hartford shire).
- ✓ They are capable of causing severe disease and must be given after earlier vaccination with least harmful vaccines (Live lentogenic vaccines).
- ✓ Capable of producing a high secondary immune response.

3. Killed vaccines:

- ✓ Prepared from both virulent and avirulent form.
- ✓ Given either by i.m or s.c route.

MATERNAL IMMUNITY :

- ✓ This may prevent the effectiveness of primary vaccination, so, the birds are either vaccinated at 3-4wks of age or vaccinated with live virus at one day old chicks by eye drops or coarse spray and revaccinate at 3-4 wks of age.
- ✓ Killed vaccines successfully in one day old maternally immune chicks.