

Respiratory System Infections in Chickens

(Epidemiology)

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Infections caused by bacteria

- Infectious Coryza
- Mycoplasma infections
- Fowl Cholera
- Ornithobacterium Rhinotracheale Infection (ORT)
- *E. coli* (APEC) infection

Infections caused by viruses

- Paramyxovirus infections
 - Newcastle disease (Paramyxovirus type 1)
 - Paramyxovirus type 2 infections
 - Avian metapneumovirus infection (AmPV)
- Avian influenza
- Infectious bronchitis
- Infectious laryngotracheitis
- Adenovirus infections

Infections caused by fungi

- Aspergillosis (*A.fumigatus*, *A.niger*, *A.flavus*)

Pathogenesis

Upper respiratory tract;

- constantly in contact with microorganisms
- Natural and acquired defense mechanisms play an active role in the destruction of microorganisms
- These mechanisms limit or inhibit the replication of the microorganism
- Limits the colonization of microorganisms in tissues

Pathogenesis

- Significant loss of cilia cells occurs in viral infections
- Disruption of the normal structure of ciliated cells provides an advantage for bacterial colonization
- A similar effect among bacteria is also produced by *Mycoplasma* agents
- A high level of ammonia in the flock causes decreased activity of ciliated cells

Respiratory Tract Infections

- Interaction between microorganisms
- Immunosuppression
- Environmental factors
- Vaccine reactions

Interaction between Microorganisms

Mycoplasma + *E. coli*

Mycoplasma + Adenovirus

Mycoplasma + Reovirus

Mycoplasma + Haemophilus paragallinarum

IBV+ *E. coli*

NDV + *E.coli*

NDV (vaccine) + Mycoplasma + *E.coli*

AmPV + *E.coli*

Immunosuppression:

IBD in chickens

Hemorrhagic enteritis virus (HEV) in turkeys

Environmental factors:

Atmospheric ammonia

Dust

Vaccine reactions:

Temperature of flock

Environmental conditions

Application failure

Vaccination route

Wrong choice of vaccine



Respiratory System Infections

Clinical signs and Necropsy

- range from mild upper respiratory tract symptoms to severe systemic signs
- Mortality can range from 1% to 20-30%, and is very high in vNDV and HPAI
- Although necropsy findings are specific in some diseases, the involvement of bacterial agents can alter the situation

Diagnosis

Microbiological and Molecular Analysis

- Bacteriological
- Viral
- Mycology

Adverse Effect

- Increase in mortality rate
- Additional treatment costs
- High culling rate
- Decrease in egg production
- Deterioration in eggshell quality
- A decrease in hatching efficiency is observed.

Protection and Control

Correct diagnosis

Control of immunosuppression

Appropriate environmental conditions

Appropriate disease control

- An appropriate vaccination program
- Biosecurity