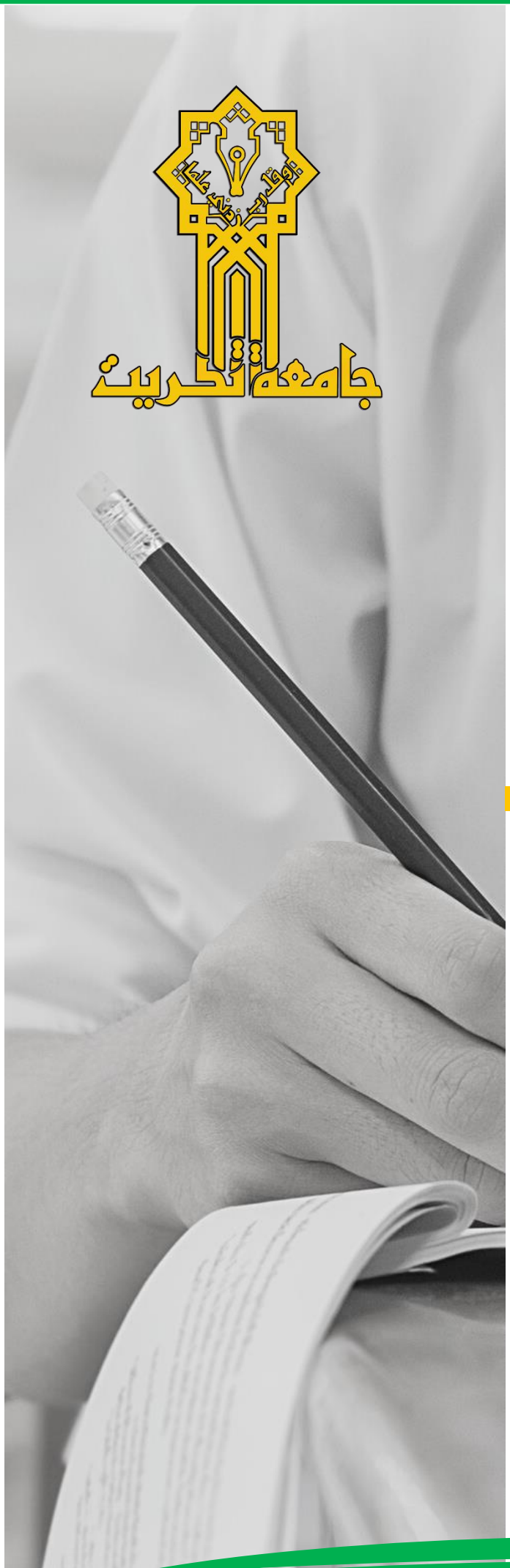

Tikrit University
College of Veterinary Medicine

Avian Adenovirus

Subject name: Poultry Diseases

Subject year:2024

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SCAN ME
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8-Avian Adenovirus Infections (AADV)

Family:Adenoviridae

Genus:Aviadenovirus Group 1 → **HHS (Serotype 4).**

→ **IBH (Serotype 11).**

Genus:Siadenovirus Group 2 ⟶ **Hemorrhagic enteritis(turkey).**

Genus:Atadenovirus Group 3 ⟶ **EDS76(Egg drop syndrome virus).**

1-Hydropericardium Hepatitis Syndrome(H.H.S) (Angara disease)

***Definition::**it is **acute** infectious disease of chickens characterized by **high morbidity and mortality rate, excess pericardial fluid**, multifocal hepatic necrosis and present **basophilic intranuclear inclusion bodies** in hepatocytes.

***Etiology:** Pathogenic Group I Adenovirus Serotype 4.

*The economic important difficulties to determine because the condition occur with other disease such as Velogenic ND, Mycoplasmosis, MD, Salmonellosis, IBD, CAV.

***Incubation period:**- is short **(24-48 hr.).**

***Synonyms:**

1-Angara disease.

2-Inclusion body hepatitis-hydropericardium.

*Host Susceptibility:

Immature chickens are the natural host and most commonly in **3-5 weeks** of age of broiler.

*Transmission:

1-Vertical.
2-Horizontal transmission by carrier.
3-Commercial transmission.
Viral replication in the **intestine tract** and the contamination occur by **feces** in clothes, foot wear, equipment, vehicles.

4-**Contaminated vaccine** prepare in embryo derived from infected flock may also source of infections.
5-There is evidence that needle or plate use in vaccination and bleeding of viremic birds if not sterile can transmit infection.

*Morbidity and Mortality rate:-

Duration of infection usually ranged from **9-14 days** with morbidity rate **(10-30%)** and **mortality 30-70%** depending on the preparing and titer of virus and route of administration, the **daily mortality 3-5%.**

*Clinical Signs:

Flocks with HHS show no specific clinical signs.
1-**sudden death.**
2-Ruffled feather.
3-**yellow mucoid** drooping are characteristic.
4- Severe **anemia** (because bone marrow affected) in affected birds.

*Gross lesion:

1-The most **characteristic lesion** is presence of up to **10ml of clear transudate in** the **pericardial sac**.
2-Liver and kidney are usually **enlarge,** pale, friable, hepatic necrosis.
3-**Petechial hemorrhage** may be present on the pericardium and under the capsule of liver.
4-Congestion and pulmonary edema.

*Microscopic lesions:-

1-The lesion in heart consist of **myocardial edema**, degeneration and necrosis with mild mononuclear cells infiltration.
2-Multifocal **coagulative necrosis** with mononuclear cells infiltration and **basophilic intranuclear inclusion bodies in hepatocyte** in liver.
3-May be extensive areas of necrosis in renal epithelium.

*Diagnosis:

1- Case history.
2-clinical signs.
3-Gross lesion.
4-laboratory test.
5-Can be done by histological demonstration of **basophilic intranuclear bodies in hepatocytes**, it consider highly suggestive of HHS.
6-To confirm the diagnosis by isolated by infected embryonic chick liver in egg of chicken.

*Treatment:-

1-There is no specific treatment of HHS.
2-**Using Iodophore(0.07-1)% of 2.5%** in drinking water of affected flock to reduce mortality and severity of disease.

*Prevention andControl:-

1-Management procedure.
2-**Vaccination** (**killed vaccine**).

Referens:

1-Saif, Y. M. (2009). *Diseases of poultry*. Twelfth edition. Iowa. Blackwell.2009. 251-290.

9-Inclusion Body Hepatitis (IBH)
(Aplastic anemia)

***Definition:** **acute** infection disease of **young and mature** chicken characterized by **sudden onset**, short course, **pathogenic liver change and anemia**.

***Etiology:** pathogenic **adenovirus serotype 11 Group I.**

***Transmission**: like HHS.

***Clinical Signs:**
1-Depression (Crouching position).
2-Ruffled feathers.
3-Pale of comb and wattles.

***Gross lesion:**
1-Liver swelling, yellow, mottled, with petechial hemorrhage.
2-Kidney and **bone marrow** are pale and mottled spleen.

***Microscopic lesions:-**
The important lesion **Basophilic intranuclear inclusion body in hepatocyte**.

10-Egg drop syndrome (EDS76).

***Definition:** it is infection disease of laying hens, characterized by producing thin shelled or shell-less eggs.

***Etiology: -** Pathogenic **adenovirus Group 3**.

*First isolate 1976, and introduced into chickens through **contaminated vaccine**.

***Incidence and prevalence: -**wide spread in many countries.

***Transmission of the disease:** same to HHS.

*Clinical Signs (Symptoms):-

***The first was **loss of color in pigmented eggs, followed by production of thin-shelled, soft-shelled or shell-less eggs**.
*The thin-shelled eggs were often rough with **sandpaper-like texture** or granular roughening of the shell at one end of the egg.
*The fall in egg production was **very rapid** or extended over **several weeks**.
*EDS outbreak usually lasted **4-10 weeks**, and egg production was reduced by **upto(40%).**
***Watery albumin** has described.

*Gross lesion (P.M):-

***In naturally occurring outbreaks of EDS, **inactive ovaries and atrophied oviducts, uterine edema, flaccid ovules**, and eggs in various stages of formations in the abdominal cavity.
*Mild splenomegaly.

*Microscopic lesions:-

***The major pathologic changes occur into **oviduct and shell glands.**
*Virus replication in the nuclei of epithelial cells, and **intranuclear inclusion bodies** from **7 days post infection**.
*Many affected cells were sloughed into the lumen and there was rapid and severe inflammatory response with macrophage, plasma cell, lymphocytes, variable number of heterophil.

*Inclusion bodies were **not seen after the 3rd day** of abdominal egg production, but viral antigens persist for up to 1 week.

*Diagnosis:-

1-case history.
2-Clinical signs.
3-P.M lesion.
4-Isolation and Identification.
5-HI, ELISA.

*Prevention andControl:-

1-Management procedures.
2-Vaccination.**Oil-adjuvant inactivated vaccine** is widely use and gives good protection against EDS, the birds are vaccinated between **14-16 weeks of age**.

*Treatment:-

1-No Successful treatment.
2-Vitamins, increase **calcium** or protein in the ration.