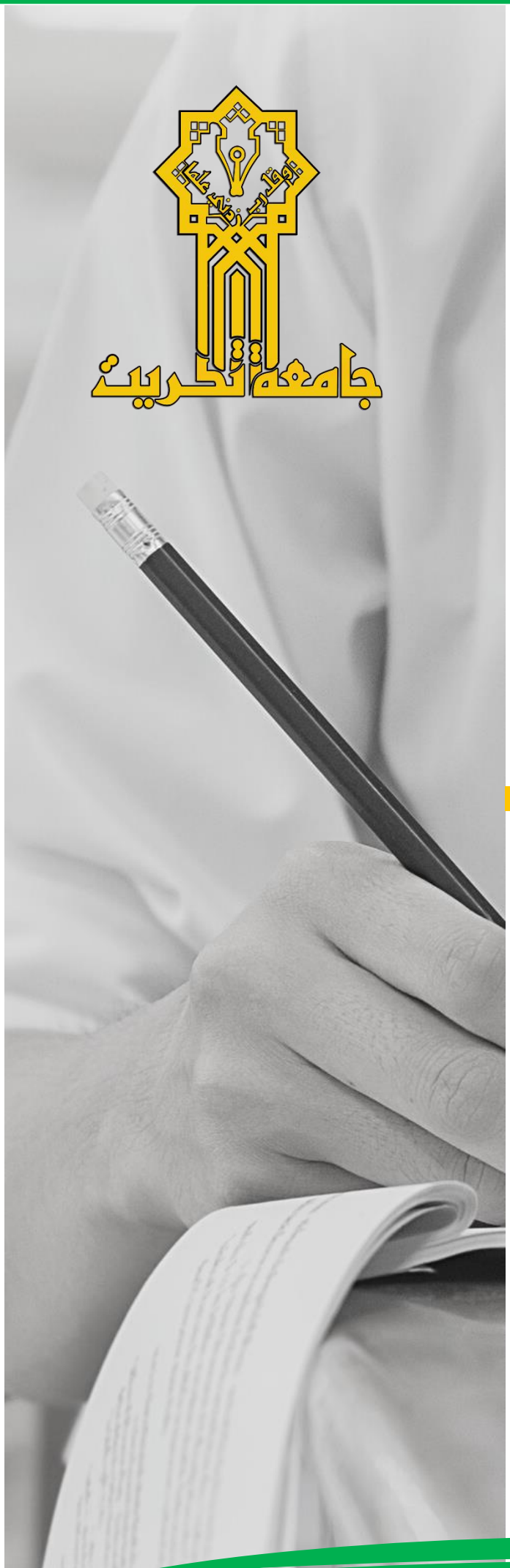

Tikrit University
College of Veterinary Medicine

Ulcerative Enteritis

Subject name: Poultry Diseases

Subject year:2024

Lecturer name: Nawar Ali Jasim

Academic Email:pdvet10@tu.edu.iq

SCAN ME
Lecturers link

Clostridial Diseases

There are four clostridial diseases of Poultry:-

1-**Ulcerative Enteritis** (UE) caused by Clostridium Colinum.

2-**Necrotic Enteritis** (NE) caused by Clostridium perfringes.

3-**Gangrenous Dermatitis** (GD) caused by Clostridium perfringes or Clostridium septicum.

4-**Botulism** caused by Clostridium botulinum.

1-Ulcerative Enteritis (U.E) or Quail Disease

***Definition**: it is acute bacterial infection in young chickens, turkeys and characterized by sudden onset and rapidly increasing mortality.

*The disease was **first** seen in quail, therefore **called quail disease**.

***Etiology**: - caused by Clostridium Colinum, **gram positive**, large rod, nonmotile, **spore forming**, and aerobic bacteria.

***Epidemiology:-**

1-U.E is found in wide range of avian hosts but **quail** are the most susceptible species.

2-It is more frequently seen in **young birds**, it is occur in chickens and quail (4-12weeks), turkeys (3-8 weeks).

3-The outbreaks in chickens are often following **coccidiosis**, **chicken infectious anemia, Infectious bursal disease** (IBD) and **other stress condition**.

*Transmission:-

The disease transmitted through **droppings**, birds infected by **ingestion** of **contaminated feed, water and litters,** because the organism produce **spores,** resulting in **permanent contamination of premises** after outbreak has occurred.

*Morbidity and Mortality rate:-

1-The course of disease in flock generally **lasted about (3weeks**) with a peak of mortality occurring at **(5-14 days) postinfections (PI)**.

2-The mortality in **chicken** may range from **(2-10%)**, but in young quail high 100%.

*Clinical Signs:-

1-The birds from acute disease dying (**sudden death**) usually **well muscles** and **fat** and have **feed in crop**.
2-They may exhibit watery white diarrhea as UE progress.
3-Infected bird become listlessness and the **eye partially closed.**
4-Ruffled feathers.
5-**Emaciation** with **atrophy of pectoral muscle** is seen in birds affected **1week** or **longer**.

*Gross lesion:-

1-**Acute lesions** characterized by marked **hemorrhagic enteritis**, in duodenum, small **petechial hemorrhage** may be visible through serosa of intestinal wall.

2-The bird which **survive for several days** show **necrosis and ulceration** which may occur in any portion of **intestine and ceca**.

3-The early lesions characterized by **yellow small foci** with **hemorrhagic borders** on serosal and mucosal surfaces.
4-As ulcer increase in size, the hemorrhagic borders tends to disappear.

5-The **ulcer** maybe roughly circular in outline and it maybe **superficial with raised edges.**

6-**Ulcers in ceci** have a central depression filled with **dark staining** material that **cannot be rinsed off.**

7-**Perforation** of the ulcer frequently occurs, resulting in **peritonitis** and **intestinal adhesion.**
8-Liver lesions vary from **yellow mottling** to **large irregular yellow areas** along the edges of liver or **gray foci** or small yellow foci which sometime surrounded by pale yellow hallow.
9-The lesion of UE in chicken is similar to that produced by Eimeria brunette.

10-The characteristic lesions in turkey are **necrotic diphtheritic membrane** occupied the middle third of intestine.

*Diagnosis:-

1-The presence of typical **intestinal ulceration** and **necrosis of the liver** and enlargement, hemorrhagic spleen.
2-As aid in diagnosis, necrotic liver tissue can be crushed between two slides, fixed by heat and stain by Gram's stain ⟶ **large G+ rods, subterminal spore** and **free spore** can be seen.
3-Fluorscent Abs technique.
4-Agar gel diffusion test.
5-Isolation of causative agent.

*Differential Diagnosis:-

Similar diseases that must be differentiated from UE are:-
1-Coccidiosis.
2-Necrotic enteritis.
3-Histomoniasis.

1- Coccidiosis. The disease in chickens, turkeys occurs together with UE.
It is important that differentiate between coccidiosis and UE be made because medication for each disease is distinct.
2- Necrotic enteritis. Can be differentiating by gross and histopathologiclesions.

3- Histomoniasis. It produce caseous cores in ceca and necrotic areas of varying size in the liver, while in UE, cecal ulceration and liver necrosis can distinguished from histomoniasis.

*Enlarged hemorrhagic spleen and intestinal ulcerations are characteristic of UE.

*Histologic examination of liver or ceca will reveal histomonas.

*Treatment:-

1-Sulfonamides (unsuccessful).
2-Streptomycin, at level of **60g/ton** of feed or **1g/gal of water**.
3-Chemotherapeutics drugs (Furazolidone, chlortetracycline) have efficacy for controlling UE in quail
4-Penicillin, ampicillin.
5-Ulcerative enteritis can be prevented and/or controlled through medication by either drinking water or feed.

2-Necrotic Enteritis (N.E)

Or Clostridial Enteritis or Enterotoxemia or Rot Gut.

*__Definition__: Acute bacterial infection of primarily young chickens, and infect adult, characterized by **sudden onset, high mortality and necrotic of the mucous membrane of small intestine**.

*__Etiology__**: -** caused by __Clostridium Perfringens__ type A and type C and its toxin (alpha and beta), Gram positive, spore forming, non-motile, anaerobic.

*__Epidemiology__**:-**

1-Naturally occurring outbreaks of **NE** in **chickens** from **2 weeks to 6months** of age, and in turkeys **7 to 12 week old**.

2-The onset of intestinal clostridium infection in chickens may be **precipitated by the nature of ratio** (high level of fish meal or high level of wheat).

3-Damage of intestinal mucosa by predisposing factor such as **Coccidiosis**, **IBDV** and other stress factor.

*__Transmission__**:-**

1- __Clostridium Perfringens__ can be found in **feces, soil, dust**, **contaminated feed, litter and intestinal contents**.

2-Domestic **flies** are mechanical vector.

*Clinical Signs:-

1-Clinical signs is **very short** and often birds found acutely dead **(sudden death)** without any signs of disease.

2-The outbreak include **severe depression**, decrease of appetite, **diarrhea**, reluctance to move, ruffled feathers.

*Gross lesion:-

1-The lesions in outbreaks usually are confined to **small intestine (jejenum** and **ileum**).

2-Intestinal wall friable and distended with gas.

3-The mucosa of intestine is lined by a **loosely to tightly adherent yellow or green pseudomembrane**that described as **"Turkish towel" appearance**.

4-Flecks of blood may be seen but hemorrhagic is not prominent feature.

5-Hepatitis characterized by swollen, tan colored with **necrotic foci.**

*Microscopic lesions:-

1-The lesion characterized by **sever necrosis** of intestinal mucosa with fibrin mixed with cellular debris adherent to necrotic mucosa.

2-The initial lesions develop at **top of villi** and are characterized by **sloughing of epithelium** and colonization of expose lamina propria with bacilli, accompanied by coagulation necrosis.

3-The Area of necrosis are surrounded by heterophils, progression of lesion usually occurs from villi to crypts.

4-Necrosis may extend into **submucosa and muscular layers** of the intestine.

5-Numerous large bacilli often observed attached to cellular debris.

6-In many outbreaks, various **sexual and asexual stages of coccidian** are also found in the intestine.

*Diagnosis:-

1-Canbe made based on gross and microscopic lesions.
2-Isolation of causative agent.
3-ELISA technique (sandwich).
4-PCR.

*Differential Diagnosis:-

1-Ulcerative enteritis (UE).
2-*Eimeriabrunette or E.maxima*infection.

***Treatment:-** penicillin, oxytetracycline, furazolidone in feed or water.