

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 (jejunum 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-Can be 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-*Eimeria brunette* or *E. maxima* infection.

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