



Colibacillosis in Poultry

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INTRODUCTION

Colibacillosis is a localized or systemic infection caused by avian pathogenic *Escherichia coli* (APEC). It manifests in diverse ways, including as acute fatal septicemia, subacute pericarditis, airsacculitis, salpingitis, peritonitis, and cellulitis. It is one of the most commonly occurring and economically devastating bacterial diseases of poultry worldwide.

Etiology

Escherichia coli, a gram-negative rod shape facultative anaerobic bacteria belong to the family Enterobacteriaceae. *E. coli* is a natural inhabitant of gastrointestinal tract both producing disease under certain stressful conditions such as overcrowding, poor ventilation, malnutrition, extreme temperature and immune suppression. It is one of the main cause of economic losses in the poultry industry.

Route of Transmission:

Escherichia coli is ubiquitous in nature and cosmopolitan in distribution. It is a common inhabitant of the intestinal tract of poultry and other birds. The feed, water, litter, faecal material, dust particles inside poultry shed, rodent droppings are the source of infection. Transmission is also possible from breeder/layer to the new born chick via vertical route.

Clinical Findings and Lesions:

Signs are nonspecific and vary with age, organs involved, and concurrent diseases. Signs may include listlessness, ruffled feathers, depression, decreased appetite, cough, and change of voice in breathing. Yellowish colored droppings, diarrhea, and soiled vent openings are also common in more severe cases. Gross pathological lesions were severe in liver which comprise of necrotic hepatocyte, with the nuclei shrunken and disposition of fibrinous exudates with congestion of the surface of the liver and heart similarly types of lesions air sac were generally cloudy and covered with a thin to thick layer of fibrin. The finding is current with the shows scattered pieces of Yolk, Thick yolk, Cheese like material or Milky fluid in the abdominal cavity.



Fig. 1: Colibacillosis Infections in Poultry



Fig. 2. Fibrinous exudates with congestion of the surface of the liver

Diagnosis: Diagnosis of colibacillosis is based on symptoms and lesion is enough for tentative diagnosis. Confirmation of colibacillosis requires isolation and identification of laboratory of pathogenic coliform bacteria. Most strain of *E.coli* and other coliforms are naturally present in the gastrointestinal tract of birds. The pathogenic strains can be separated from non- pathogenic strains because they form specific structures of the cell wall.

Prevention and control:

- Prevention of colibacillosis is best achieved by good sanitary and hygienic Managemental practices.
- Faecal Contamination of eggs can be prevented by frequent egg collection, keeping the nest material clean, discarding the broken eggs properly and disinfecting the eggs within 2 hours of laying.
- Maintaining proper ventilation and litter quality is a very important element in reducing the risk of development of colibacillosis.
- The control of rodents and other insects is also of importance for prevention of colibacillosis.
- Regular vaccination of birds for immunosuppressive disease like IBD and procurement of Mycoplasma free eggs. Other than that, nutritional management such as provision of vitamin A, vitamin E, selenium and probiotics can improve the overall health of the birds and help in reducing the incidence of colibacillosis.