



Avian Salmonellosis

Imran Ali
Asst. Professor
Veterinary Pathology
Bihar Veterinary College, Patna

- Important bacterial diseases caused by genus ***Salmonella***
– a major threat to poultry industry
- Pullorum disease : caused by *S.pullorum* with vertical transmission
- Fowl typhoid : caused by *S.gallinarum* with either vertical or horizontal transmission
- Paratyphoid :(Salmonellosis) caused by different serotypes like *S.typhimurium* / *S.enteritidis* / *S.thompson* / *S.bareilly* which are carried through birds or other species of animals that excrete through their feces and contaminated product
-

- Pullorum disease is a highly contagious, egg-transmitted disease. It is mainly a blood infection of chickens.
- The disease is characterized by white diarrhoea in young chicks.
- Previously “Bacillary white diarrhoea

Etiology

Salmonella pullorum

- Gram negative, non-sporogenic, non-motile rods, 1.0-2.5 μm in length and 0.3- 1.5 μm in width
- Facultatively anaerobic, members of family *Enterobacteriaceae*

- The most important method of spread is vertical transmission. That is. from an infected hen through the eggs to the newly hatched chicks.
- Such newly hatched chicks spread the infection to other chicks in hatcheries through their soft feathers which are heavily contaminated by *S. pullorum*.
- Affected chicks shed *S. pullorum* through the faeces. *This is the major method of spread among chicks.*
- Contaminated feed, water and litter can also be a source of *S. pullorum infection.*
- Attendants, visitors, feed dealers, and chicken buyers who move from house to house and from farm to farm, may carry infection.

Pathogenesis:

- Organisms may enter through feed and water
- Also inhalation of dust having bacteria
- Infection in the gut
- Multiplication in the reticulo endothelial System
- Colonization of lower intestine

- Enters in the blood stream
- Reproductive tract within 1 hr and localized in liver, gall bladder, spleen, ovary, heart, lungs & kidneys.
- After this infection is through faeces or egg,
- Vertical transmission

Symtoms

- Huddlings near the source of heat
- Samnolence
- Loss of appetite
- White diarrhoea
-

- Under three weeks of age
- Dead in shell chicks
- High mortality of chicks shortly after they are hatched
- Depression with tendency to huddle under brooder
- Respiratory distress
- Loss of appetite
- White viscous / slimy droppings adhere to feathers around vent.
- Mortality 100%

- Growing Birds-
- Sub acute form with lameness and swollen hock joints and poor growth
- Older Birds-
- Listlessness
- Pale & Shrunken combs
- Suboptimal egg production
- Mortality rate- can be 100%

Postmortem lesions

- Chicks-
- Unabsorbed yolk sac, peritonitis
- Lungs are congested
- Liver is dark and swollen with haemorrhages
- Typhlitis seen as enlarged and distended with casts of hard, dry necrotic material
- Small white necrotic foci often in liver, lungs, myocardium, gizzard walls

- Growers-
- Arthritis- Hock joints are enlarged due to presence of excess lemon or orange coloured gelatinous material around the joints
- Adults-
- Abnormal ovary with ova - irregular, cystic, misshapen, discoloured and pedunculated with prominent thickened stalks.
- In some ovary is inactive
- Peritonitis, arthritis and pericarditis
-

Diagnosis:

- **Diagnosis:**
- Isolation and Identification
- Serological
- Rapid plate agglutination test for flock testing

