



## Lecture title: Columnaris Infection

**Lecturer Affiliation:** *Shahbaa KhalilAL-Tae, BVMS, MSc, PhD Department of Pathology and Poultry Diseases*

**Summary: Definition:** a common bacterial, highly contagious disease has been reported worldwide and most species that affects the skin or gills of freshwater fish, the condition may be *chronic*, *acute* or *per acute*, with water temperature elevated above 15 °C and strain virulence being the most significant factors determining the severity of disease.

**Etiological agent:** *Flexobacter columnaris*, these are motile, long, thin Gram-negative bacilli.

### Transmission

Horizontal transmission is common, through ingestion, contact, or inoculation.

### Risk Factors

- 1- High nitrite, alkalinity, hardness, and calcium
- 2- Water temperature is usually high (e.g. with morbidity and mortality highest at 24–32°C)
- 3- Physical injuries

### Pathogenesis/ Pathological Lesions

**Pathogenesis:** Columnaris is primarily an epithelial disease causes erosive *cellular adhesion agents*

.may become systemic

← necrotic skin and gill lesions

### Pathological Lesions

#### ➤ Skin lesions :

- 1- They begin at the saddleback as raised whitish plaques with a reddish zone of hyperaemia around the periphery

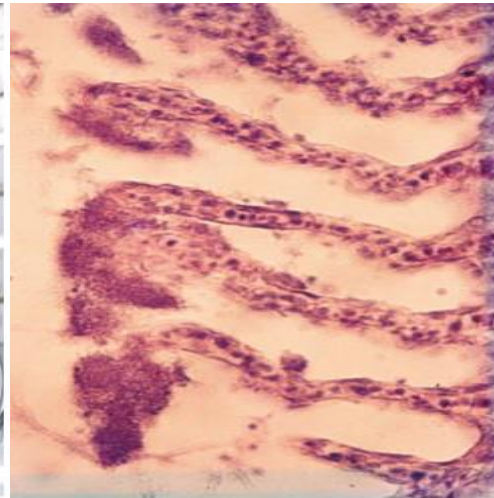


- 2- Develop into hemorrhagic ulcers
- 3- Ulcerations spread and may penetrate into deeper tissues, producing a bacteremia. Lesions may be yellow or orange due to the pigmentation of the individual bacterial cells.

➤ **Gill Lesions:**

- 1- Less common but more serious

Columnaris begins at the tips of the lamellae and causes a progressive necrosis that may extend to the base of the gill arch



**Treatment**

➤ **Antibiotics**

- 1- Florfenicol 10–15mg/kg every 24 hours for 10 days
- 2- Oxytetracycline dihydrate 83 mg/kg every 24 hours for 10 days

➤ **Chemotherapeutic bathing**

- 1- Hydrogen peroxide (35% Perox-Aid®) 50–75mg/L for one hour every 48 hours for three treatments

➤ **Physical treatments**

- 1- Lowering the temperature
- 2- Raising the salinity (>5 g/L) and low hardness (<70 mg/L)