



Tikrit University
College of Veterinary Medicine

Bacterial diseases

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Lecturers link

Bacterial diseases

1-Tail Rot Syndrome or Fin Rot

Its common bacterial disease in fish. it occurs at mid to last summer when fingerlings are harvested and transported from ponds to quarantine tanks. The disease is characterized by necrosis of the caudal fin.

Pathogen:-

The causative agent is *Aeromonas formicans* isolated from affected fish , it non motile gram negative bacteria .

Transmission :-

- 1- Direct contact with infected fish.
- 2- Through contaminated water .
- 3- The infestation by parasites considered a predisposing factor for this disease.
- 4- The deficiency of folic acid or Vit. A may be considered anther predisposing factor.

Clinical and pathological lesions:-

- 1-An eroded tail fin
- 2- Necrotic tissue on caudal peduncle
- 3-Presence of white line at lateral margin of the dorsal fin

Diagnosis:-

- 1- Signs and lesions
- 2- Isolation the bacteria .
- 3-Microscopical examination.
- 4-Serological & Biochemical tests .



Treatment:-

1-Oxytetracycline bath, 20 mg/L 7 days at 20–30°C.

2-Salt (NaCl) 2 g/L water in bath may assist in recovery by preventing bacterial and fungal infection.

3-Fill the pond with good water quality

2- Motile Aeromonas Septicemia (MAS)

Its acute or sub acute or chronic infection disease for all freshwater fish characterized by rapidly fatal septicemia with Ascites

Pathogen:-

The disease caused by bacteria gram negative, short rods ,motile, singular polar flagellum called *Aeromonas hydrophila*.

The mechanism of transmission:-

1-Direct transmission from infected fish to a healthy one by the feces or injuries.

2-Indirect through external or internal parasites such as *Lernea*.

Signs and pathological lesions:-

1- Loss of appetite

2- Exophthalmia, opaqueness of eyes

3- Present the necrotic area in the muscles .

4- Dermal ulceration with present focal hemorrhage with inflammation of intestine.

5-Liver and kidney are enlarged ,congested with present focal necrosis .

Diagnosis:-

1-Clinical signs and P.M. lesions.

2-Isolation and identification the causative agent.

Treatment and control:-

1-Oxytetracycline 20 mg/L water for 7 days.

2-Salt (NaCl) 2 g/L in bath water for 10 days .

3-Potassium permanganate 2 – 4 mg / L for 5 days

3- Bacterial Enteritis

This disease infected the grass carp of two years age .the mortality rate up to 90%.Characterized by Inflammation with congestion the intestine.

Pathogen:-

The causative agent is gram negative rods bacteria called *Pseudomonas fluorescence intestinalis* .

Signs and lesions:-

- 1-Swollen & congestion of the vent.
- 2- Clotting blood from the vent.
- 3-Dark color of swim bladder.
- 4-Present the large amount of fluid in the abdominal cavity.
- 5-Inflammation with congestion the intestine .

Diagnosis:-

- 1- Signs & lesions.
- 2- Isolation of the causative agents.

Treatment :-

Sulfa guanidine 1gm / 10 kg B.W. for 4 days .

4-Red Spots Disease

The disease characterized by skin ulceration on different parts of the body, occur commonly in grass carp .Found two forms , hemorrhagic form& ulcerative form.

Pathogen :-

The causative agent gram negative, motile rods with rounded ends called *Pseudomonas fluorescence migula*.

Clinical signs:-

- 1-Ulceration & congested skin.
- 2-Bloody spots in the fins.
- 3-Hemorrhage around mouth.
- 4-Scales may fall down.
- 5-Inflammation of the skin & muscle may be contain pus.



Treatment:-

Using oxytetracycline 3-6 mg / fish (I.P. injection).

5-White Skin Disease

This disease infected the silver carp characterized by white color of the skin, occur usually at May or August.

Pathogen:-

The causative agent gram negative rods with 1-2 flagella called *Pseudomonas dermoalba*.

Signs:-

- 1-Present white mucous material covering the skin between the dorsal fin base and tail.
- 2-The infected fish well swim with raised up tail
- 3-Mortality rate is high seen after 2-3 days of infection.

Diagnosis:-

- 1- Signs
- 2- Isolation of the agent

Treatment:-

- 1-Aeromycin 120 mg / L. for 30 minutes for 3 days.
- 2- Oxytetracycline mixed with feed at 10 gm / 100kg feeding for 10 days.

G-Mycobacteriosis (T.B.)

Its chronic to sub acute disease which caused by *Mycobacterium spp* characterized by inflammation of the skin ,exophthalmia ,ulceration & grayish nodules in the viscera.

Pathogen:-

Mycobacterium marinum is non motile , non-sporulated straight or slightly curved, gram positive bacteria.

Signs

- 1-Irregular swimming.
- 2-Loss of appetite
- 3-Emaciation and poor growth
- 4-Shallow grayish irregular ulceration on the body surface.
- 6-Fin erosion
- 7- Granulomas in viscera (kidney, spleen and heart), 1 to 4 mm diameter
- 8-Exophthalmia and abdominal swelling (ascites)

Diagnosis:-

- 1-Case history .
- 2-Clinical signs and P.M. lesions.
- 3- Isolation of the agent

Treatment and control:-

- 1-Removal the infected fish.
- 2-Oxytetracycline 10gm / 100 kg B.W. for 10 days
- 3-Treatment of the parasites to prevent spreading of infection
- 4- Used formalin compounds for fish farm disinfectant .

7-Bacterial Gill Disease

Its chronic to subacute disease affect all fish ,characterized by respiratory disturbance .

Pathogen:-

The causative agent filamentous yellow pigmented cell wall gram negative thin rod bacteria called *Flavobacterium branchiophila*.

Predisposing factors :-

- 1-Crowding
- 2-Low dissolved O₂ concentration
- 3- Increased ammonia level

Transmission:-

- 1-Infected fish
- 2- Contaminated water

Signs & lesions:-

- 1-Loss of appetite
- 2-Swim at the surface of the water
- 3-Increased the mucous material, congestion and gray spots in the gills .
- 5-The kidney contain necrotic foci.

Diagnosis:-

- 1- Signs & lesions
- 2- Isolation of the causative agents

Control & treatment :-

- 1- Providing high quality of water for increasing the level of O₂
- 2-Prevent overcrowding
- 3-Decreasing the level of organic material
- 4-Using disinfectants such as:
Potassium Permanganate 100mg / L for 10 hours.

8- Vibriosis

The disease is affecting fresh water fishes which characterized by septicemia, dermal ulceration, ascites and necrosis.

Causative agent:

The most important etiological agent of vibriosis is *V. ichthyodermis*, is gram negative, rod-shaped bacterium either curved or straight, motile, non-sporulating and noncapsulated.

Stress factors:

1. High water temperature.
2. Overcrowding in fish farm.
3. Organic pollution of the water.
4. Poor nutrition.
5. Poor water quality.

Mode of transmission:

1. The infection may be transmitted through oral route.
2. External injuries and external parasites may play a role in transmission of infection through the dermal route.
3. Feeding of the fishes from contaminated food .

Incubation period:

Incubation period may be 3 days. This depends on virulence of the pathogen.

Clinical signs:

1. Fish die without showing any clinical signs.
2. Anorexia, darkening of the skin in young fish.
3. There is abdominal distension, anemia and dermal hemorrhages.
4. Present red spots on the ventral and lateral areas of infected fishes.
5. Congestion and swelling of the spleen, liver and kidney.
6. Eye lesions are common including corneal edema, ulceration and exophthalmos.
7. Paleness of gills may be show in chronic infection.



Diagnosis:

1. Case history.
2. Clinical signs and P.M.
3. Isolation and identification of *Vibrio spp.*
4. ELISA and immunofluorescence tests help in diagnosis of the disease.

Treatment and control:

1. Oxytetracycline: 3-5gm/100 L of fish / day for 10 days.
2. Good management for fish farm.
3. Disinfection of the fish egg may help in prevention of the infection.
4. Disinfection of all containers and equipment to prevent spread of the infection.

9-Nocardial Diseases

Its chronic disease characterized by granulomatous disease of the skin, muscle, and various inner tissues of infected fish.

Causative Agent:

Nocardia asteroides gram positive, non – motile, aerobic bacteria.

Transmission:

It transmitted through horizontal transmission from sick fish to health fish.

Clinical Signs :

The affected fish characterized by large belly and enlargement of the mouth, change in skin color.

Pathological Lesions

- 1-White-yellow granulomata are usually 1-2 mm in size. with spots are most obvious in the muscular , spleen, kidney and liver, swim bladder .
- 2-The typical external lesions are: skin nodules and ulceration.
- 3- Present irregular white masses at the base of the gill filaments.

Treatment and Control:

1. Oxytetracycline: 3-5gm/100 L of fish/day for 10 days.
2. Good management of fish farm.