

Bacterial Diseases

Bacterial hemorrhagic septicemia

The disease is also called infections dropsy of carp, it's a systemic disease of uncertain etiology associated with *Aeromonas punctata*, *Aeromonas hydrophilia*, *Pseudomonas fluorescens*, *Aeromonas liquefaciens*,

The disease characterized by dermal ulceration, ascites and necrosis of the major organs.

The causative agent:

A. hydrophila is a motile Gram-Negative bacillus. The disease is common and important to fresh water fish usually carp is more sensitive and brackish –fish.

Some investigations considered that the bacteria is a primary cause of the disease, other hypothesis have presentable evidence that the disease is of viral origin primarily and that the bacteria are secondary invaders, other attribute this to temperature because of the incidence of the disease is highest during summer months.

Epizootiology:

The bacteria is normally found in the mud and in the intestine and other organs as normal inhibitor but the heavy reproduction of bacteria due to stress factors will change it to pathogen, These stress factors include low resistance of the fish due to transportation and injuries or due to high fish population and starvation.

The mechanism of transmission of infection:

The bacteria can be transmitted from infected fish to a healthy one by the feces or injuries or by the parasite after the entrance of the bacteria to the digestive system, it will reproduce so rapidly and penetrate the intestine to the blood stream causing bacteremia and reach many organs like kidney, liver, spleen where it causes the lesions, then excretes the toxins causing septicemia and this is the acute form of the diseases which cause anemia and increase the osmosis of the blood vessels so the fluids will accumulate in the abdominal cavity causing the ascites and anal prolapsed, and the accumulation of the fluid in scale pouch or scale pocket resulting in desquamation of the scales and vesicle formation as well as in eye chamber resulting in exophthalmia.

All ages are susceptible to the disease but mostly under one year age. The disease occurs at the end of winter and beginning of spring.

Clinical and pathological symptoms:

The disease occurs with two forms of the disease:

The acute form:

Ascites or typical dropsy with high mortality rate up to 80% -90% the disease continued 2-3 weeks the main symptoms are

- Ascites
- Hemorrhagic lesions on the external parts of the body and fins.
- Bristling of the scales
- Exophthalmia.

The chronic of the disease:

Appears in Autumn observation of red patches on different parts of the body, mainly the hind parts and the back parts , transverse to skin ulceration these are circular in shape , the center of these ulcerations are (dark – reddish) in color with the edges (greenish – blue) color . Mortality rate up to 30%-40%.

P.M examination:

Shows inflammation of anterior part of the intestine red color of the liver with pigmentation of all the internal organs by the bile pigment.

Diagnosis:

Based on the:

- Clinical symptoms.
- P.M. examination.
- Time of infection.
- Laboratory bacterial examinations.
- Blood examination and bacterial isolation.

Control and Treatment:

- Isolation of infected fish.
- No fish transmission from affected area.
- Drying and disinfecting the ponds by coal 650 kg/donem.

Infected fish can treated by two ways:

- Using methylene blue with food 1gm/one kg food three times a day for one day and leave treating 3 days (the course of treatment 8 days).
- Using antibiotics: Oxyteracycline: 10-100 mg/ kg B.W. for 5-6 days.
Tobramycin: 1.8-2 gm/kg of food 8 days.

Red Spot Disease

Appearance of skin – ulceration on different parts of the body.

Causative agent:

Bacteria *Pseudomonas flourescens migula*

Gram negative bacilli, motile.

Clinical symptoms:

- Skin congestion
- Desquamation of the scales.
- Bloody red spots on the fins.
- Ulcerative hemorrhage around the mouth.
- Ulcerative inflammation of the skin and muscles.
- Loss of body weight and cease feeding.

Control and treatment:

- Drying and disinfecting the ponds.
- High quality of food.
- Isolation of infected and dead fish.
- Using chloride of lime to disinfect the ponds 5-10 mg/L. for 30 minutes.
- Use antibiotics tetracycline or Oxyteracycline 3-6 mg/ fish (I.P.injection)

White skin Disease

Disease of silver carp characterized with white coloration of the skin caused by bacteria *Pseudomonas dermoalba*

Causative agent:

Gram negative diplo- bacilli with 1-2 flagella.

Clinical symptoms:

- White coloration of the skin between the dorsal and caudal fins.
- Then this spread all the posterior part of the body.
- Sometimes fish swim and tail-up.
- Mortality rate is high seen after 2-3 days of infection in May-August.
- Fish less than one year are more susceptible.

Treatment:

Use antibiotic like Aeromycin 120 mg /L. for 30 minutes.

Bacterial Enteritis

Grass carp of two years age most susceptible to the disease. Mortality rate up to 90%.

Causative agent:

Bacteria *Pseudomonas fluorescens intestinalis* Gram negative rods.

Clinical Symptoms:

- Redness and swelling of the anal area.
- Body mucoid discharge.
- Swimming bladder dark in color.

P.M. examination:

Fluids in the abdominal cavity and reddish inflammatory spots in the intestine.

Treatment:

Sulpha drugs with food like: Sulphaquanidine 0.5 gm/10 kg B.W. for 6 days.

Streptococcal Disease

Systemic disease of carp and Grass carp with low mortality especially in young age fish.

Causative agent:

Bacteria *Streptococcus fecalis*.

Gram +ve, cocci, non-motile, non-capsulated.

Clinical symptoms:

- Disease results due to human contamination
- Lesions is non specific.
- Inflamed and hemorrhage about the anus.
- Congestion, swollen of the kidneys and liver.
- Isolation of Bactria from blood, liver. heart , kidneys and intestine

Control and Treatment:

- Isolation of infected fish.
- Improvement of environmental conditions.
- Use antibiotics for treatment.