

BLOAT DISEASE

Causes and symptoms similar to dropsy
It is mostly seen in African origin cichlids
Metronidazole 1 tablet / 38 lt

why more; bacteria in the stomach and intestine, parasites, length of digestive system (cichlids)

long-term protein feeds and live worms
with feeding dissolved – foods and frozen foods
large piece of feed without being soaked in water

Symptoms; fish quickly becomes weakness, does not feed, throws food from the mouth

color darkens, prefers to hide,
first 1- 2 days of the disease abdominal swelling or inward

In treatment; fish taken to quarantine aquarium with clean water

Metronidazole 1 tablet / 38 lt

Penicillin 1 tablet / 50 lt

50% of water changed after 24 hours
Treatment continues 3 consecutive times

The fish responding to the treatment will get better in 3 to 4 days

POP - EYE DISEASE

The cause is not fully known.

Adverse aquarium conditions are the preparatory factor.

Small eye wounds are infected.

Dense salt application at frequent intervals

If not taken measures, the eye becomes blind

Treatment in another aquarium with clear water and definite get better continue until. Treatment is not interrupted.

Penicillin, amoxiciline, tetracycline, erythromycine used.

Pop-eye disease can be seen generally before and after tail and fin decay diseases

SWIMMING DISEASE (SWIM BLADDER DISEASE)

It is generally seen as a symptom of another underlying cause.

- 1) pouch anomalies from birth
- 2) tuberculosis
- 3) constipation - indigestion
- 4) insufficient and poor quality nutrition
- 5) excessive and rapid rise-drop in water temperature
- 6) bacterial - parasitic infections

Symptoms; swelling, abnormal and irregular swimming, swimming mostly lying on the right side, fish can not find the balance, slow swimming at the edge or at the bottom in the aquarium cause of change in swimming excessive swelling of the swimming sac fish can not stand balanced, can not swim regularly, can not go in the direction

In treatment and prevention; first step; elimination of the main cause, fin rot and constipation affected swimming sac and not excessive and monotype nutrition

Live and herbal feeds are changed and given at regular intervals
Water temperature must be constant
Frozen foods should not be given without complete dissolution
In case of constipation, feeds can be cooked and given
The feeds are given in small volume, but a little more frequently

CONSTIPATION

With overfeeding, digestive system swells and cannot digest, the system is blocked

This situation does not develop quickly or suddenly, it is shaped in time
Feeds are given either too much or too frequent feeds

In the stool hanging from the fish's anus and hanging for a long time, and colour change in stool or discoloration in stool

In treatment and protection, shrimp meal suspended in paraffin oil in 30 min.
boiled spinach very small amount mixed with live feed
The fish is treated in a separate aquarium;

INFECTIOUS DISEASES

TUBERCULOSIS

This disease, which is rare in nature, often appears in culture and aquarium.

There are strains and environment differences between human and fish factors (Human factor 35 °C - fish factor 30 °C and below). It is a chronic disease.

Agents : *Mycobacterium marinum*

M. fortuitum

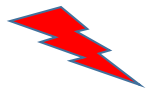
M. chelonae

M. pisciana

Gram-positive factors include aerobic, acid-resistant, non spore and encapsulated.

Epidemiology: microorganisms enter contamination of contaminated food and from lesions in the skin, in live births, offspring may be infected.
in contact with very crowded aquariums ,
the microorganisms can spread by eggs
agents can remain alive in water environment, and in contaminated material in 2 years

Symptoms: all symptoms are difficult to see in a fish
sometimes asymptomatic (disease 1 year later)
reduction of appetite, losing weight, spilling of scales, small or large foci in skin, ulcer develops , ulcers open in time and agents go into water, swelling in the abdomen,
white nodules in internal organs (but *Ichthyosporidium* nodules black), the diameter of these nodule is proportional to the size of the fish (1-4mm)



miliar tubercule areas in kidney, liver and spleen



Zoonotic importance : fish tank granuloma -- swimming pool granuloma

*important for warm blooded vertebrae
granulomas with cutaneous character on the arms and the hands*

difficult to treat and persistent, resistant to drugs

*infected aquariums must be cleaned with gloves.
the disease is contacted by human (attention to contact with fish)*

Diagnosis: symptoms are not always insight, it is important to confirm with the findings of the autopsy

Treatment -Prevention: No protective vaccines
sick fish are taken out of the water
treatment lasts longer
disinfection of infected materials
used kanamycine, erythromycine, streptomycine (normal dose)

NOCARDIOSIS

characterized by discoloration in the skin and anorexia, inactivity,

Agent: *Nocardia asteroides* (most common species)

N. kampfii

gram positive, spore-free, uncoated, optimum reproduction at 20-30 ° C for 4-15 days

Contamination: contaminated feed and sick fish in aquarium

Symptoms: can be seen in all age groups

caseous nodules in the skin, gill and all internal organs

color loss in the skin, swelling muscles

reduced appetite, losing weight

Diagnosis: very similar to clinical and necropsy tuberculosis

definitive diagnosis is only with the isolation of the agent

Treatment-protection: no vaccine developed

at least 30 days in quarantine aquarium before new fish wait for weeks

Sulfanamide, doxycycline and minocycline are effective

COLUMNARIS DISEASE

Columnaris disease is mainly divided into two forms

- 1) fresh water columnaris disease
- 2) salty water columnaris disease

Fresh water columnaris disease:

Round gray-white, surrounded by red rims in various parts of the body characterized by color spots, ulcers and lesions

Etiology: agent *Cytophaga* (*Flexibacter*) *columnaris*

4 different virulence strains are found in the fish;

high virulence ----- death within 24 hours

middle virulence ----- death 24 - in 48 hours

intermediary virulence ---- death in 48 - 96 hours

weak virulence ----- death 96 hours after or health

Epizootiology: if the water temperature is high, the disease is very visible

young fish are more sensitive than adults

porters are important for the disease to enter the aquarium

low virulence strains are more effective at 20 ° C

disease with high virulence strains seen with septicemia and fishes dies without clinical symptoms

the causative agents of fish are mainly from portraits on the skin,
in addition to there is contamination with contact
agents healthy and normal skinned fish also found

Symptoms: incubation time is 1 - 5 days depending on water temperature and virulence
the disease is peracute, acute and subacute

peracute form; 80-100% death is observed especially in young fish,
symptoms usually not seen

acute form; head region and around of the mouth, gill and fins surrounded by red or gray-white
necrotic focus

necrosis deepens, muscle tissue exposed
necrosis can cover 25-30% of fish surface

gill vessels swelling, gills yellow-orange colored
gill lamellae melts in a short time

Fins become necrosis starting from the periphery, the radiuses melt until they remain

The color of fish opens before death

Death usually occurs within 48 hours or slightly longer

In slow developing cases; lesions creates preparatory media for secondary infections

Autopsy; there is usually no finding, there are severe septicemia and hemorrhage

Diagnosis; with lack of thickening and proliferation in the gills is distinguished from Bacterial Gill Disease ; with the absence of thickening of the fins is distinguished from disease Fin Disease

interfering with saprolegniosis, but this is fungal disease and general formation, the course and symptoms are monitored.

In protection; water temperature lowered and disease is taken under control

sick fish are removed from the aquarium

antibiotics are given in a separate container or quarantine aquarium

Tetramycine 50-75 mg/kg / day X 10

Aureomycine 10-20 mg/lit 3-4 days (bathing 40-50 minutes)

Chloramphenicol 5-10 mg / lit 3-4 days (bathing 40-50 minutes)

Sulfamerazine 0.1-0.3 g / kg / day X 7-10
150-200 mg / kg / day X 10

Copper sulfate 1 / 2000 /day / 1-2 minute

Malachite green 1 / 15.000 day / 10 – 30 seconds

Potassium permanganate 1 / 50 000 / 10 minute