

Mycobacteria in Fish

Depending on your fish experience, you may have heard a lot or very little about the potential dangers of mycobacterial infections. This disease can be very hard to diagnose without proper pathology processing and can persist in seemingly healthy systems for years. Clinical signs are very vague and can be augmented by other problems with your tank. Of all the diseases fish can potentially contract, this one can be passed onto HUMANS. Due to the severity of this disease, we're here to set the record straight and make sure all fish owners know the ins and outs of this disease.

What is mycobacteria?

Mycobacteria is most commonly associated with tuberculosis. It persists in almost all aquatic environments as a non-harmful environmental contaminant. Some species, however, can infect fish, including *M. marinum*, *M. fortuitum* and *M. chelonae*. *M. marinum* can be found in both freshwater and marine environments. It is spread through direct contact and release from the internal organs post-death.

What are the clinical signs of infection with mycobacteria?

Unfortunately, the clinical signs of a mycobacteria infection are very vague. It is most commonly associated with wasting, loss of body condition, lethargy and anorexia. Other signs include scale loss, skin ulcers, a dropsy-like appearance, reproductive problems and a host of secondary infections.

How is a mycobacterial infection diagnosed?

Mycobacteria is diagnosed in fish through a biopsy of internal organs sent to an aquatic pathologist. There are no tests that can confirm mycobacteria in live fish at this time. The presence of mycobacteria is confirmed using an acid-fast stain.

What treatments are available for mycobacteria?

The saddest part of this infection is that no treatments are available for a mycobacteria infection. Fish can persist with this bacteria in low stress environments with good water quality, but will eventually succumb to the disease. It is recommended the entire system be decontaminated with a carefully selected disinfectant that will penetrate the mycobacteria. Not all disinfectants will work with mycobacteria. Prevention is key through proper quarantine and possibly sacrificing some individuals for histopathology screening.

Is mycobacteria dangerous to humans?

Yes. This is one of the fish diseases that can be passed onto humans. Although the disease is rarely life-threatening, the bacteria can easily enter any open cuts or sores that are placed in tank water. Take proper precautions and avoid contact with tank water and do not allow other pets to drink the water.

What do I do if I think my fish may be infected?

It is extremely important that mycobacterial infections be diagnosed as early as possible. Contact your local aquatic veterinarian or aquatic pathologist to get your fish tested. (<https://aquavetmed.info> or <https://fishvets.org>) Remember, there is no testing available for live fish, so you may need to sacrifice a sick individual to confirm.

References

Francis-Floyd, R. 2011. Mycobacterial Infections of Fish.
Southern Regional Aquaculture Center.

Francis-Floyd, R & R Yanong. 1999. Mycobacteriosis in Fish.
University of Florida IFAS Extension.