Acta Scientific Veterinary Sciences (ISSN: 2582-3183)

Volume 3 Issue 7 July 2021

Short Communication

Survey on Viral Hemorrhagic Septicemia Disease in Aquatic Animals

Mohammad Forouhar Vajargah*

Fisheries Department, Faculty of Natural Resources, University of Guilan, Sowmeh Sara, Iran

***Corresponding Author:** Mohammad Forouhar Vajargah, Fisheries Department, Faculty of Natural Resources, University of Guilan, Sowmeh Sara, Iran.

Received: June 18, 2021

Published: June 29, 2021

In general, any factor that upsets the hemostatic balance of the living organism creates a condition called disease. VHS is a seasonal deadly infectious disease of fish that is most severe in late winter and early spring when the water temperature rises. It is a specific infectious disease that occurs in a fish farm establishment usually following the importation of live fish from another infected plant. The disease is caused by the VHSV virus in fish, which is a type of RNA virus that is in the form of a bullet. The causative agent is a rhabdovirus. The virus is highly sensitive to heat. At 60°C, it disappears within fifteen minutes. It survives at 0°C for 24 hours but at -20°C for a long time. The vhs virus has four types of genotypes, including genotypes 1, 2 and 3, which are mainly found in Europe and Asia and cause a severe disease in Trout are rainbow trout, and genotype 4, also known as the North American genus, has been found in wild fish on the west and east coasts of North America, and more recently in the Great Lakes Watershed.

External symptoms of the VHS disease

Acute

This form of the disease is observed in early spring, which is associated with severe and rapid mortality. The fish is dark in color and the one-sided protrusion of the eye is obvious. Signs of anemia and streaks of bleeding can be seen on the gills, as well as bleeding in the conjunctiva tissue around the eyes.

Chronic

Following the acute form, the chronic condition is characterized by low mortality. The affected fish is dark and almost black in color and has a severe, bilateral protrusion of the eye. Severe anemia and discoloration of the gills are also seen due to anemia. It should be noted that bleeding is milder in the chronic state and may not even be seen in some cases.

Nervous

This condition can only be detected by observing the movements of fish in the water. The affected fish shows spiral movements towards the bottom of the pond or the center of the water outlet fences and swims in a circular path on one side with tense and contractile movements and sometimes on the water. These fish cannot be distinguished from healthy fish by any external signs except shrunken bellies and natural red gills.

Internal symptoms of the VHS disease

The most characteristic internal sign is scattered bleeding, especially in the conjunctiva tissue of the eye, muscles, visceral fats, swimming bag, peritoneum, heart, etc.

Tissue examination shows accumulation of red blood cells with coagulated plasma, most likely due to rupture of capillaries. The liver is acutely bloody and dark ruby in color, while in the chronic form it is very pale and grayish. The kidney is red in the acute form and is usually thin, while in the chronic form it tends to be gray and is bulky and wavy. Other fish organs with VHS show no obvious symptoms and it is impossible to find large and small lesions in the nervous form.

Symptoms

- **In solitary and solitary type:** Internal bleeding - external bleeding - ascites (dehydration of the abdomen) exophthalmos (bulging eyes) - irregular swimming.
- **In demographic type:** Rapid death.

Diagnosis

The definitive diagnosis of the disease is based on the isolation of the virus from cell culture and its identification with the help of electron microscopy and using serological methods. The virus of this disease can be isolated by homogenizing internal organs, sexual products and fish urine. The virus is more prevalent in the anterior regions of the kidneys and spleen than in the liver, heart and muscles.

Disease transmission

The disease is transmitted mainly by water contaminated with the virus. VHS virus can be transmitted to susceptible fish of all ages. The virus can remain in the body of a host fish for a long time and is excreted in the urine and sexual secretions of fish. Transmission through infected egg surfaces may occur but vertical transmission and entry of the virus into the egg has not been established. Outbreaks appear to be exacerbated when water temperatures are at their lowest levels (4 to 14°C). It is believed that the use of infected marine fish in fresh, fresh diets and contaminated eggs causes transmission. Becomes ill. Fish can be experimentally infected by injecting intramuscularly, intraperitoneally, immersion in virus-containing water, and by eating virus-containing food. It is believed that some birds, such as herons, can transmit the virus mechanically.

Prevention and treatment

VHS control method is to prevent the entry of infection and contact of virus-sensitive fish. In order to supply water to cold-water fish breeding centers, virus-free water (spring and well water) should be used or wild fish should be prevented from entering the workplace, and the used water should be disinfected with UV rays if possible. Reducing environmental stress can be effective in controlling the disease. Eggs should be obtained from non-contaminated breeders. For greater safety, iodinated disinfectants of 100 ppm can be used for ten minutes and the eggs disinfected. To disinfect pools and cement canals. Formalin solution, sodium hypochlorite or iodophores can be used [1-6].

Bibliography

1. Yalsuyi AM and Vajargah MF. "Recent advance on aspect of fisheries: A review". *Journal of Coastal Life Medicin*e 5.4 (2017): 141-148.
2. Cusumano MA., *et al*. "Strategic maneuvering and mass-market dynamics: The triumph of VHS over Beta". *The Business History Review* (1992): 51-94.
3. McMahon RG., *et al*. "First scientific results from the VISTA hemisphere survey (VHS)". *The Messenger* 154.35-37 (2013): 188.
4. Sattari M. Ichthiology 2 (2008).
5. Sattari M., *et al*. "Ichthyology (1): Anatomy and physiology". Naghsh Mehr Publication (2002): 659.
6. Ahne W and Thomsen I. "Occurrence of VHS virus in wild white fish (Coregonus sp.)". *Zentralblatt für Veterinärmedizin Reihe B* 32.1-10 (1985): 73-75.

Volume 3 Issue 7 July 2021