Studies in the First Outbreak of Vibriosis Associated with Pasteurelosis at Siberian Sturgeon (Acipenser baerii) in the South-West Region of Romania. Preliminary Report

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Abstract
The studies was carried out in a sturgeon farm located in the south-west region of Romania. In the context of high density of the fish, the first clinical signs of the disease was the anorexia, followed by the appearance of bleeding on the fin, tail, gills and abdominal tegument. The ascitis was present but not common. The bacteriological exam emphasized the presence of Vibrio alginolyticum and Photobacterium spp. (formerly Pasteurella spp) with high sensibility at fluorfenicol. This is the first outbreak of vibriosis associated with pasteurelosis at sturgeon in the south-west region of Romania

Keywords: pasteurelosis, sturgeon, vibriosis.

1. Introduction

Pasteurelosis and vibriosis are major bacterial diseases with major impact on marine aquaculture, affecting many species of marine fish.[1,2]
Infections with Photobacterium spp. (formerly Pasteurella spp) were reported in USA since 1964. After 1990, these infections were diagnosed in Europe. The disease was reported in Dicentrarchus labrax and Sparus aurata in France, Portugal, Malta, Greece, Italy, Spain, England.[3]
In the specialized literature, pasteurelosis is considered a specific disease of marine environment. In freshwater there is little data in literature showing the presence of diseases
Khalis and *Aly* (2008)[4] signals the presence of Photobacterium spp. In freshwater of Egypt at Nile tilapia and Mugilus spp. The diseases was reproduced at carp (Cyprinio carpio).
Vibrio alginoliticus as a distinct species of Vibrio is frequently involved in outbreaks of diseases with dramatic evolution in many species of marine fish.[5,6]
In this study are presented preliminary data on the evolution of an outbreak of vibriosis and pasteurelosis in farmed siberian sturgeon (Acipenser baerii) in the South-West region of Romania.

2. Materials and methods

The studies were conducted in an outbreak of diseases occurred in Siberian sturgeon (Acipenser baerii) raised in intensive system on a farm in Timis county of Romania. Farm has a strenght of over 3000 siberian sturgeon find in the life winter.

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For diagnosis, in addition to study anamnesis epizootological characters and clinical manifestation, samples were collected for bacteriological examination. In order to establish the diagnosis were sent to the Laboratory for Infectious Diseases of the Faculty of Veterinary Medicine fish in agony, sample of water and food.
For bacteriological exam seeding was done from the kidneys, liver, spleen on following media: Difco agar, blood agar, marine 2216E agar, TCBS (thiosulphate citrate bile salt sucrose agar).
Incubation was done differently, 2-7 days at 20ºC respectively 48-72 hours at 25ºC. The grown bacteria was examined morphological, microscopic and biochemical using traditional methods.[Susceptibility testing was done by disk diffusion on Mueller-Hinton agar Difco.

3. Results and discussion

The diseases initially started in single tank-tank number ten, inhabited by 500 fishes.
First clinical signs of illnes were loss of apetite, slight immobility and swimming at the water surface. Should note that in all basins of increasing populations density was disallowed high. Because of this the fishes look uneven.
With about two days before the onset of disease, besides stressful effect of overcrowding was superimposed stress generated by the transfer of smaller sized fishes in separate pools to be fed properly.
Shortly, mucus hipersecretion was observed and also, the first bleeding lesions on fins, tail, gills and integument. At this stage appeared the first mortality. At the examination of gross lesions it was found congestion of the gills, even bleedings, haemorrhagic enteritis and flui in the abdominal cavity.
Kidneys, liver and spleen had large areas of degeneration. Also, bleeding foci were observed in liver and kidney. At some fishes, brain congestion and bleeding in the eyes occurred.
The diseases has spreded rapidly to other tanks, with same clinical manifestation.
Bacteriological exam has showed the presence of Vibrio alginolyticus and Photobacterium spp.
Pending its antibiogram enrofloxacinum spoke at dose of 10 mg/kg body weight/day in feed.
Antibiogram shoed that the two bacterial strain were resistant to enrofloxacinum and high sensible at fluorfenicol. Enrofloxacin therapy was stopped and exchange with florfenicol spoke at dose of 10 mg/kg body weight/day in feed.

The diseases evolved with 0.6% mortality in tank11, 8.20% in tank 5, 21.50% in tank 15 and 25.71% in tank10.

After seven days of treatment mortality ceased, the treatment being continue until 10 days.

Figure 1 Bleeding on fins at Siberian sturgeon withe vibriosis and pasteurelosis (original)

Figure 2. Gills haemoraghic lesions (original)

Figure 3. Haemorrhagic enteritis due by Vibrio alginolyticus (original)

Figure 4. Siberian sturgeon vibriosis associated with pasteurelosis: hepatic degeneration and skin bleeding (original)

4. Conclusions

This is the firs outbreak of vibriosis associated with pasteurelosis at Siberian sturgeon (Acipenser baerii) in the South-West region of Romania.

Vibrio alginolyticus and Photobacterium spp isolated was high sensible at fluorfenicol.
One of the reason which had led the emergence of the disease was overcrowding.
Further investigations are necessary to determine the source of infection.

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