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Fish Mycobateriosis: An Emerging Disease in Italy

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Abstract

Mycobacteriosis is a severe chronic disease that affects a wide range of species globally both in culture and wild settings and is zoonotic also. The pathology is caused by Mycobacterium. Recently in Italy this the disease is becoming emerging, in fact outbreaks of disease have been reported in both marine and freshwater fish. Therapy is rather difficult, so it is important try to prevent the disease through the development of vaccines.

Keywords: Mycobacteriosis; Marine fish; Freshwater fish; Aquaculture

Introduction

Mycobacteriosis is a severe chronic disease that affect a wide range of species globally both in culture and wild settings [1-5]. *Mycobacterium* species have been recognized as a significant source of morbidity and mortality in farmed and wild fish [5,6]. The pathology is caused by several species of acid-resistant bacteria belonging to the genus *Mycobacterium*. These microorganisms determine diseases in fish with a long course usually chronic, with a systemic granulomatous character, representing agents of zoonoses and thus could cause serious problems for operators in the fishing industry [7]. Among the various species are *M. fortuitum*, *M. chelonae* and *M. marinum*, that is isolated from fish with nodules macroscopically visible or detectable only histologically and by individuals with no injuries [1]. The symptoms of the disease appear late and are non-specific; they include slow growth, lethargy, anorexia and starvation. Lesions in the skin and typical whitish nodules in the viscera may be detected at necropsy [8]. Therapy is rather difficult, both for the fact that early diagnosis is seldom achieved and for the lack of effective drugs [1]. Although these bacteria are more widespread in freshwater species than in seawater species, lately there has been a sharp increase of the disease in farmed and wild seawater species [9,10]. Recently in Italy the disease is becoming emerging, in fact there are more and more cases of outbreaks of Mycobacteriosis among marine fish such as: wild mullets (Mugil sp.) in Ligurian Sea [11], in wild grey mullets (*Mugil cephalus*) in Sicily [6], in farmed Seabass (*Dicentrachus labrax*) in Sicily (Mancuso M. Personal Communication) and in freshwater fish also [12-14]. To prevent the disease is important try to develop an effective vaccine. Kato et al. [15] proposed the use of the two new vaccines Bacillus Calmette and Guèrin (BCG), an attenuated strain of Mycobacterium bovis conferred a great immunity to Mycobacterium sp. infection.

References

1. Ghittino P (1985) T ecnologia e patologia in Acquacoltura, Vol. II – Patologia. Bono Editore, Torino, Italy.
2. Colorni A (1992) A systemic mycobacteriosis in the European sea bass Dicentrarchus labrax cultured in Eilat (Red Sea). Israeli Journal Aquaculture 44: 75–81
3. Dos Santos NMS, Do Vale A, Sousa MJ, Silva MT (2002) Mycobacterial infection in farmed turbot Scophthalmus maximus. Disease Aquatic Organisms 52: 87–91
4. Jacobs JM, Stine CB, Baya AM, Kent ML (2009) A review of Mycobacteriosis in marine fish. J Fish Dis 32: 119-130.
5. Gauthier DT, Rhodes MW (2009) Mycobacteriosis in fishes: a review. Vet J 180: 33-47.
6. Marino F, Gaglio G, Macrì D, Bonfiglio R, Primerano D, Lanteri G (2012) Patologie di cefali del Lago di Faro (R.N.O. di Capo Peloro, ME)- Società Italiana di Patologia Ittica Udine.
7. Ghittino C, Bozzetta E (1994) Profilassi delle zoonosi di origine ittica. Medicina Veterinaria Preventiva 7: 5–6.
8. Ghittino, C (2002) Indagine sulla diffusione delle Micobatteriosi ittiche e sui relativi reperti anatomoistopatologici. Tesi di Specializzazione in Allevamento, igiene, patologia delle specie acquatiche e controllo dei prodotti derivati. Università degli Studi di Padova, 1–50.
9. Prearo M, Zanoni RG, Campo Dall'Orto B, Pavoletti E, Florio D, et al. (2004) Mycobacterioses: Emerging Pathologies in Aquarium Fish - Veterinary Research Communications 28: 315–317
10. Prearo M, Latini M, Proietti M, Mazzone P, Campo Dall'Orto B, et al. (2002) Casi di micobatteriosi in pesci rossi d'acquario. Bollettino Società Italiana di Patologia Ittica 33: 30–43.
11. Varello K, Prearo M, Serracca L, Meloni D, Rossini I, et al. (2014) Granulomatous lesions in a wild mullet population from the eastern Ligurian Sea (Italy): mycobacteriosis vs. pseudotuberculosis. J Fish Dis 37: 553-558.
12. Zanoni RG, Florio D, Fioravanti ML, Rossi M, Prearo M (2008) Occurrence of Mycobacterium spp. in ornamental fish in Italy. J Fish Dis 31: 433-441.
13. Passantino A, Macri D, Coluccio P, Foti F, Marino F (2008) Importation of mycobacteriosis with ornamental fish: medico-legal implications. Travel Med. Infect Dis 6: 240-244.
14. Macrì D, Lo Verde V, Mancuso I, Reale S, Passantino A, et al. (2008) Mycobacteriosis in ornamental fish. Case reports in Sicily and medical-legal considerations. Vet Res Comm 1: 215-217.
15. Kato G, Kondo H, Aoki T, Hirono I (2010) BCG vaccine confers adaptive immunity against Mycobacterium sp. infection in fish. Dev Comp Immunol 34: 133-140.