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Frequency of mycobacterial infections in retailed fish in Karaj: An Iranian perspective

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ABSTRACT

Objective/Background: Mycobacterium species comprise one of the most frequently-reported causative agents in granulomatous lesions of fish. Also, mycobacteria have been documented as fish-born zoonoses. Ornamental aquaria, commercial aquaculture, and wild fisheries therefore produce a potential risk of infection for humans through physical contact and consumption of fishes. A number of fish mycobacteriosis and fish-born zoonotic cases have been reported to date in Iran.

Methods: In order to examine the frequency of mycobacteria existence in fish supplied to the public in seafood retail outlets, whole fresh fish from cold water ($n = 50$) and tropical ($n = 50$) audible fish were obtained from five stores in Karaj, the central city of Alborz province. The head, tail, and offal of these fish were sampled during the necropsy and used for mycobacterial culture on Lowenstein–Jensen slopes.

Results: In total, 15 acid-fast isolates were collected including 10 from tropical fish. The *16S ribosomal RNA* and *hsp* genes of all isolates were polymerase chain reaction amplified and sequenced. *Mycobacterium fortuitum* was the most frequent mycobacterium identified in the study panel according to the Basic Local Alignment Search Tool search results. Work is still ongoing to characterize the other cultured mycobacterial isolates.

Conclusion: The detection of 15 culturable mycobacterial isolates from 100 audible fish is an indication of bacteria highly active in the colonization in fish populations. Assessing the potential zoonotic risk raised from exposure of human to fishes in Iran demands search for evidence of linkages between mycobacteria infecting human cases and fishes.

Conflicts of interest

All authors declare no conflicts of interest.

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