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An evaluation of the prevalence of *Mycobacterium marinum* in aquaria and its impact on man

Juanita Ann SPITERI^{1*}, Paul CUSCHIERI¹ & Julia HAIDER¹

Mycobacterium marinum is a pathogenic organism normally found in aquaria and is the cause of fish tuberculosis. However, it also has the zoonotic potential to affect humans. Granulomatous lesions of the hands are the common presenting manifestation and while this infection is generally cutaneous, it can disseminate if not treated. Although publications on this organism exist, studies have not investigated aquarium water as the probable source of infection. This infection has been observed amongst the Maltese population, resulting in an annual incidence of five cases per annum being detected at Mater Dei Hospital.

Two-hundred and thirty-five (235) specimens of aquarium water were collected to determine the prevalence of *Mycobacterium marinum* in Malta. All of these were treated to concentrate the bacterial load and enhance the possibility of mycobacterial isolates using Petroff's technique, with subsequent subculture onto egg-based inspissated solid media and broth media pre-treated with antibiotics. Growths were identified as positive for mycobacteria by a Ziehl-Neelsen stained smear. Phenotypic and biochemical tests were performed on all samples with a positive mycobacterial culture. Real-time PCR was used to fully identify and, hence, confirm the presence of *Mycobacterium marinum* in suggestive aquarium water samples.

An overall prevalence of 1.3% positive cultures for *Mycobacterium marinum* was subsequently found. Although the prevalence is low, this confirms that the infection is present in Maltese aquaria and corroborates the possibility that contact with contaminated aquarium water may lead to infection in man. Hence, a greater awareness should be established amongst both the aquarist and medical community.

¹ Bacteriology Laboratory, Pathology Department, Mater Dei Hospital, Malta

* Corresponding author. E-mail: juanita-ann.spiteri@gov.mt