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Recreational water sources and health hazard (Contamination of recreational water sources to pathogenic *Acanthamoeba* in Iran)

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Acanthamoeba spp. are the causative agents of severe diseases such as keratitis and encephalitis. Presence of pathogenic *Acanthamoeba* in environmental sources such as water could be a health threat for high-risk people including contact lens wearers and immunosuppressed patients. The present study was conducted to address the distribution of *Acanthamoeba* spp. in recreational water samples of North of Iran. Overall, 50 samples were collected from recreational water sources including man-made and natural waters in Gilan province. Filtration and cultivation of samples was performed using non-nutrient agar. All plates were sealed, incubated at 30°C, and monitored daily for outgrowth of *Acanthamoeba*. The presence of *Acanthamoeba* was confirmed by cyst and trophozoite morphology. For further evaluation and for elimination of bacterial and fungal contamination, the cysts were cloned, and subcultured by cutting out a small piece of agar and placing it onto a fresh plate. DNA extraction and PCR were performed using specific primer pairs. Genotype identification was based on the sequencing of *Acanthamoeba* Specific Amplimer 1 (ASA1). Out of 50 water samples, 15 (30%) were positive for *Acanthamoeba* trophozoites and cysts according to morphological criteria. Cloning of 13 isolates (26%) was done successfully. Molecular analysis of 13 *Acanthamoeba* strain revealed that all isolates were belonged to potentially pathogenic T4 genotype. *Acanthamoeba* belonging to this genotype is the most prevalent type causing *Acanthamoeba*-related infections. Presence of *Acanthamoeba* belonged to T4 genotype in recreational water sources is of concern for high risk people. Alarming sign and education to high risk people is of utmost importance to prevent such infections.

Biography

Maryam Niyiyati has completed her PhD at the age of 31 years from Tehran University of Medical Sciences with the highest grade. She has published more than 30 papers in reputed journals and has been serving as an editorial board member of reputed. She is interested in researches regarding water microbiology and chemistry.

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