

## Contamination of clinical settings to highly pathogenic *Acanthamoeba* in Iran

Maryam Niyiyati, Zohreh Lasjerdi, Ali Haghghi and Ehsan Nazemalhosseini Mojarad

Department of Medical Parasitology and Mycology, School of Medicine, ShahidBeheshti University of Medical Sciences, Iran

**A**mong many genera of free living Amoebae, *Acanthamoeba* spp are the causative agent of diseases such as keratitis and encephalitis. Presence of pathogenic *Acanthamoeba* in clinical settings such as hospitals could be a health threat for patients and high-risk people. The aim of the present study was to screen for the presence of *Acanthamoeba* in dust and biofilm samples in clinical settings located in Tehran, using culturing and molecular approaches. A total of 112 dust and biofilm samples from wards of clinical settings were collected and examined for the presence of *Acanthamoeba* using culturing and molecular approaches. Briefly, samples were filtered and cultured on non nutrient agar covered with heat killed *Escherichia coli*. The presence of *Acanthamoeba* was confirmed by morphological criteria and genus-specific primer sets. Sequences were analyzed against all eukaryotic nucleotide sequences archived in the GenBank database. Pathogenicity of the strains were detected using thermotolerance and osmotolerance assays. Of 112 samples from clinical settings, 46(41%) were positive for *Acanthamoeba* spp. Sequencing analysis revealed that *Acanthamoeba* belonged to the T4 and T5 genotypes. Most of T4 genotypes were classified as highly pathogenic strains. Presence of the highly pathogenic T4 genotype on medical instruments, including an oxygen mask and ophthalmoscope in clinical settings, should be of concern for health authorities. These results reflect a clear need for greater attention to improved disinfection, especially where susceptible patients, such as contact lens wearers or immunosuppressed patient, are served. Periodic surveillance of clinical settings is recommended to prevent disease related to pathogenic *Acanthamoeba*.

### Biography

Dr. Maryam Niyiyati has completed her Ph.D at the age of 31 years from Tehran University of Medical Sciences and she has published more than 25 papers in reputed journals. She is now assistant professor of Shahid Beheshti University of Medical Sciences in Tehran, Iran.

[maryamniyati@yahoo.com](mailto:maryamniyati@yahoo.com)