

The Isolation and Detection of Acanthamoeba Keratitis in Rural Water Sources of Arak, Iran

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Abstract

Background and Objective: Acanthamoeba species are free-living protozoa that can be isolated from all environments. They can bring about different diseases in healthy individuals and immune suppressed patients, for example, Granulomatous Amoebic Encephalitis (GAE), Acanthamoeba Keratitis (AK), Cutaneous and Nasopharyngeal infections. The aim of this study was to evaluate the Acanthamoeba prevalence in rural water sources of Markazi province.

Material and Methods: In this cross sectional study, 54 water samples were collected from 36 villages of Markus province. First, the Samples were filtered by filter paper (watchman 42). Next, the filtered paper were placed in page saline solution and centrifuged. Then, the obtained sediment was cultured on non-nutrient agar (NNA) plates overlaid with heat-killed Escherichia coli. After that, the provided smear (after 4 - 7 days) stained with Geimsa.

Results: The samples were positive (33; 61.11%) and negative (21; 38.89%) for Acanthamoeba cyst. The best result for isolation of Acanthamoeba cysts was obtained after shaking of filter paper.

Conclusion: A high percentage of rural water sources have been contaminated with Acanthamoeba, which can be the major factor in causing human infections. Therefore, some effective methods are required to prevent from water sources contamination.

Keywords: Acanthamoeba; Acanthamoeba Keratitis; Markazi Province; Rural; Water Sources