


Abstract

Free living amoeba (FLA) are unicellular protists and opportunistic pathogens of humans and animals. They are found in a variety of habitats like water, soil, and sand around the globe. As they are opportunistic in nature, they don't need a host, but can invade animals as well as humans and cause lethal diseases including keratitis and amoebic encephalitis. They also serve as host to some pathogenic bacteria, hence acting as reservoir there is increasing need of FLA study. Human can come across with these FLA from both drinking water and fresh water resources. Thus, Sampling, characterization and possible disinfection of FLA from these sources is necessary.

In present study, fifty water samples from different drinking water and fresh water were collected for screening of FLA. Samples were processed on same day and were cultured on non-nutrient agar plates. Five samples showed presence of FLA.

Amoebae were morphologically identified using inverted compound microscope. Various trophozoite morphologies were observed including acanthopodial trophozoites in samples AC and MH, eruptive trophozoites in sample RR and monopodial trophozoites in samples PS and MB. Among cysts, wrinkled cysts in sample MH, double walled cysts in samples AC, RR and MH while single walled morphotypes in sample PS and MB were observed.

Disinfection of these water samples with chlorine and hydrogen peroxide showed that 13% chlorine solution used at 5ml/L concentration against *Acanthamoeba* cysts while 1ml/l and 2ml/L against *Hartmannella* cysts, for 30 minutes can kill FLA cysts. But 10% liquid solution of hydrogen peroxide only suppresses the growth of FLA. These results suggest that people should be conscious about risks, safety measures and disinfection of water resources so that amoebic diseases can be avoided.