



## ABSTRACT

Free living amoeba are protozoa ubiquitously present in nature. Most of FLA are free living and few of them are pathogenic to humans and animals. *Acanthamoeba spp.*, *Naegleria fowleri*, *Sappinia diploidea* and *Balamuthia mandrillaris* are pathogenic to humans and animals. FLA are present in raw waters and even in drinking water after disinfection. Cysts form of FLA is resistant to various disinfectants.

The present study was conducted to detect the presence of FLA in drinking water resources of District Lahore. For this purpose, total 150 drinking water samples were collected. Water samples were collected both from tap water and filter plants. All the samples were screened for presence of FLA. FLA were detected in 9 samples out of 150. Samples collected from Chauburji, Allama Iqbal town. Shahdra, Bund road, Islampura, Sabzazar, Kot Shab-din, Johar town and Cantt were positive for FLA. FLA were identified on morphological basis by microscopy. Three genera of FLA, *Allovhalkampfia*, *Hartmannella* and *Acanthamoeba* were detected. FLA were identified on molecular basis by amplifying 18S rRNA gene by using PCR. Growth characteristics of FLA were also determined. The effect of different concentration of Chlorine and Hydrogen peroxide on disinfection of cysts of FLA were analyzed and MCC (Minimal Cysticidal Concentration) were determined. In case of Chlorine disinfection, MCC was 10mg/L for samples which were positive for *Hartmannella* and MCC for samples which were positive for *Allovahalkampfia* was 4mg/L. The growth of *Acanthamoeba* was only suppressed at different concentration of Chlorine. *Acanthamoeba* showed resistance to various concentration of Chlorine. In case of Hydrogen peroxide disinfection, MCC was 7.5% H<sub>2</sub>O<sub>2</sub> for samples which were positive for *Harmnanella*. MCC was 10% H<sub>2</sub>O<sub>2</sub> in case of *Acanthamoeba* and 3% H<sub>2</sub>O<sub>2</sub> in case of *Allovahalkampfia*.