Presence of multiple waterborne parasites related to different water resources, Dehloran, Southwest, Iran, 2016

Introduction: Without clean water there is no secure for health and social welfare. Water is the most important element in the universe and preventing of water pollution is vital for creature survival health. Centers for Disease Control and Prevention (CDC) affirm that numerous microorganisms as well as parasitic agents can be passing on by different sources of water which may contaminate human beings and animals. This study intended to investigate the presence of parasitic elements in Dehloran water resources applying Lugol’s iodine and modified Ziehl-Neelsen stain methods.

Materials & Methods: A total of 36 water samples were examined from water resources within the study district. The samples were collected from pits by accumulated water and channel water. In another study, according to similarity of population density, 50 household filter systems were collected randomly from five districts of the city (10 filter of each district; North, South, East, West and center). Three samples were prepared from each filter; one liter of pre-filtration, one liter of post-filtration and one sample of the filter system itself. Collected samples were examined for parasitic agents by Lugol’s iodine and modified Ziehl-Neelsen stain methods using light microscopic.

Results: None parasitic element was identified using above methods in prepared samples from household filter systems. However, examined 36 collected water samples from other sources revealed 5 different strains of active stages of parasitic organisms, of which 3 strains (60%) were potentially pathogenic and 2 (40%) non-pathogenic. Infective stage strains included Entamoeba histolytic/dispar, Entamoeba coli, Blastocysts hominies, Giardia cyst and Cryptosporidium oocyst like. The study also confirmed that distance between water sources and starting place of contamination, type of water samples and chlorination status had significantly statistical relationship with prevalence of contamination (p<0.001).

Conclusion: Water resources (groundwater and surface water) could directly bond with each other. If there is a contaminated source in the vicinity of a healthy source, potential for pollution is very high. Consequently, in line with the outcomes and in view of the direct connection between safe water and human health, proper performance of providing hygienic drinking water should be imposed.

Biography

Mohammad Hossien Feiz Hadad completed his PhD g from Bradford University, England in Pharmaco-parasitology on biopharmaceutical and standard drugs mechanisms of action for blood and intestinal parasites. He completed his postdoctoral studies at Nottingham Trent University, England on Leishmania vaccine focus on peptide sub-unit, DNA vaccines, centrin genes and immuno-modifier molecules OX40L, TNF super family member expressing on activated dendritic cells and involved in T cell activation. He is Supervising Msc and PhD projects in Ahvaz Jundishapur University of Medical Sciences, Iran, on evaluation of anti-protozoal drug combinations, drug resistance and Protozoal ultra-structure studies. His recent research activities focused in water-borne parasites and Water treatment technologies to remove effectively parasitic elements.

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