RESEARCH OF ENTEROAGGREGATIVE ENERICHIA COLI FROM WATER SAMPLES BY PCR ASSAY

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Enteroaggregative Escherichia coli (EAEC) has become an important emerging pathogen in many countries, in addition to being associated with outbreaks of diarrhea caused by contaminated drinking water and food. In recent years, as an alternative to traditional diagnostic test performed in cultured epithelial cells (HEp-2); molecular diagnostics have been developed for the detection of EAEC virulence genes. Thus, this study aimed to verify the presence of these genes in 500 positive EAEC strains to the phenotypic test. These isolates were obtained from 250 drinking water samples in the years 2012 to 2014 in Londrina city, Paraná. The molecular diagnostic for EAEC was performed by PCR in order to research aatA and aggR, plasmid genes, and aaiA and aaiC, chromosomal genes. It was considered as positive the sample that had at least one chromosomal or plasmid gene. Of the 250 water samples analysed, 20 (8%) were considered positive and of the four genes investigated only aaiC was present, while no strain was positive for the other markers. This all shows that the genotypic characterization is still quite ineffective against the traditional test in cell culture for EAEC diagnostic, because even with the research of chromosomal markers, the incidence of this pathotype by the molecular method remained low (8%). Therefore we conclude that the absence of a specific virulence marker also hampers the use of molecular tests in a precise diagnostic of EAEC and that further studies are needed to better characterize these strains.

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Key Words: Water, EAEC, PCR.