

TITLE: BIOCHEMICAL AND SEROLOGICAL CHARACTERIZATION OF VIBRIO CHOLERAE ISOLATED FROM SURFACE WATER OF THE MUNICIPALITY OF BELÉM, PARÁ STATE, BRAZIL.

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ABSTRACT:

Vibrio cholerae is a gram-negative facultative anaerobic bacillus, with a polar flagellum, classified in more than 200 distinct serogroups. Among them, O1 and O139 are toxigenic and responsible for causing Cholera, a disease with endemic, epidemic and pandemic characteristics. It is known that freshwater environments are the natural habitat of *V. cholerae*, playing an important role in this transmission. Environmental monitoring is recommended as a measure of epidemiological surveillance. Therefore, the aim of this study was to characterize biochemically and serologically isolates of *V. Cholerae* from aquatic environment of the municipality of Belém, Pará. Water samples were sampled biweekly from Iguarapé Tucunduba, Baía do Guajará and Rio Guamá between August 2012–2013. isolation of *V. cholerae* was performed according to recommendations described by Standard Methods for Examination of Water and Wastewater (APHA/AWWA/WEF, 2012) and by technical standard L5.507 of CETESB. Biochemical characterization was performed by the following tests: Glucose, Lactose, Saccharose, Indol, Methyl Red, Voges-Proskauer, Citrate, Phenyl Alanine, Motility, Lysine, Arginine, Control. After biochemical confirmation, all samples were submitted to a sensitivity test to determine vibriostatic. The serogroups were determined by polyvalent *V. cholerae* specific antiserum agglutination test, a total of 69 surface water samples were analyzed, OF which 58 strains were isolated. The isolation and proportional characterization by sampling point were 34.5%, 41.37%, 24.13% for Iguarapé Tucunduba, Guajará Bay and Guamá River, respectively, totalizing 100%. All the isolates presented a biochemical profile compatible with *V. cholerae*, and sensitivity to the vibriostatic agent. The isolates did not present specific agglutination against polyvalent *V. cholerae* O1 / O139 antiserum. Although all the samples were identified as non-agglutinable Vibrios (NAG), which are environmental native species associated with gastroenteritis, they could present a susceptible risk to human populations. Furthermore, molecular analysis of isolates presented in this study is necessary to achieve more detailed information concerning the genetic variability, as well as to determine the pathogenic profile of these isolates.

Keywords: Environmental monitoring; Surface water; *Vibrio cholerae* non O1.

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