Rapid detection and E-test antimicrobial susceptibility testing of Vibrio parahaemolyticus isolated from seafood and environmental sources in Malaysia.

ABSTRACT

Objectives: To find out the prevalence and antimicrobial susceptibility of Vibrio parahaemolyticus in seafoods and environmental sources. Methods: The study was carried out at the Center of Excellence for Food Safety Research, University Putra Malaysia; Universiti Kebangsaan Malaysia; Medical Molecular Biology Institute; and University Kebansaan Malaysia Hospital, Malaysia between January 2006 and August 2008. One hundred and forty-four isolates from 400 samples of seafood (122 isolates) and seawater sources (22 isolates) were investigated for the presence of thermostable direct hemolysin (tdh+) and TDH-related hemolysin (trh+) genes using the standard methods. The E-test method was used to test the antimicrobial susceptibility. Results: The study indicates low occurrence of tdh+ (0.69%) and trh+ isolates (8.3%). None of the isolates tested posses both virulence genes. High sensitivity was observed against tetracycline (98%). The mean minimum inhibitory concentration (MIC) of the isolates toward ampicillin increased from 4 ug/ml in 2004 to 24 ug/ml in 2007. Conclusions: The current study demonstrates a low occurrence of pathogenic Vibrio parahaemolyticus in the marine environment and seafood. Nonetheless, the potential risk of vibrio infection due to consumption of Vibrio parahaemolyticus contaminated seafood in Malaysia should not be neglected.

Keyword: Vibrio parahaemolyticus; Seafoods; Antimicrobial; E-test method; Food contamination.