

FOOD SAFETY AND ENTERIC PATHOGENS IN THE ENVIRONMENT: AN IMPORTANT AND COMPLICATED ISSUE IN ASIA

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Abstract

Food safety is a very important issue worldwide. Contamination of food materials by the pathogenic microorganisms whose reservoir is the natural environment is of particular importance. However, information on this matter is hardly available from many Asian countries. Collaborative studies done by this author's group and the researchers in Southeast Asian countries revealed contamination of the seafood by the enteric pathogens in the marine environment of Southeast Asia. We demonstrated presence of potentially pathogenic *Vibrio* species and toxigenic strains of *Vibrio cholerae*, agents of cholera epidemic, in the shrimp and other seafood marketed in Malaysia. Molecular epidemiological analysis of the toxigenic strains of *V. cholerae* isolated from seafood and patients in various Asian countries suggested that the Malaysian strains are composed of various clones introduced independently from the Bengal area and the clone unique to the Thailand-Malaysia-Laos region that probably persisted in the environment of this region for a long period. *Vibrio parahaemolyticus* is a very important seafood-borne pathogen causing gastroenteritis. Our multinational collaborative study discovered a pandemic spread of infections by a new clone of *V. parahaemolyticus* starting from 1995. This originated in Asia and spread to other countries worldwide. Our study done in Thailand showed molluscan shellfish (clams and a mussel) are important reservoirs of the new pandemic clone and are responsible at least for local infections. Considering the eating habit of the local people, it is not easy to control the infection. Education of the general public is considered to be of prime importance. Seafood is an important food material traded across international borders. Risk assessment of the seafood contamination by the pathogens in the Asian environment is also the subject to be studied on a global scale.