

Shigellosis Control in a Long-Stay Psychiatric Nursing Center and a Mountainous Township in Taiwan

Abstract

Shigellosis is a highly communicable gastrointestinal disease. It causes over 165 million infections and 1.1 million deaths per year throughout the world. According surveillance data, eastern area has the highest incidence rate of shigellosis among Taiwan. In eastern Taiwan (Hualien County and Taitung County), 797 cases of shigellosis are reported and 593 of them are confirmed by public health laboratory during 2001 - 2005. Most of confirmed cases are living in Hualien County (554 cases). Previous studies in Hualien showed that one long-term nursing center (VHYL), and one aboriginal mountain area are epidemic-prone zones. The purpose of this study is to evaluate the effectiveness of control measures in the VHYL and the aboriginal mountain area. The control measures in the VHYL included: 1) set up an active diarrhea surveillance system, 2) enhance the health education to workers and patients, 3) implement the guideline for nosocomial infection control stringently, and 4) launch routine anal swab examination for shigellosis. The control measure in the aboriginal mountain area included: 1) implement routine examination of water samples, 2) increase the frequencies of anal swab examination for shigellosis, 3) keep sanitation, and 4) set up an active diarrhea surveillance system. During the period of practicing the control measures, two episodes of shigellosis outbreak in VHYL showed the deficiency in control measures. In order to further investigate the cause of the outbreaks, molecular epidemiology study was carried out in one outbreak in VHYL. Isolates of *Shigella* spp. from 57 patients showed 85% genetic similarity and there was no case reported outside the institute in nearby area during that period, suggesting that the bacteria caused this outbreak might be an strain endemic in the institute. The finding that some anal swab specimens positive by Real-time PCR but negative by normal culture method indicated that the pathogen load in carriers might be quite low. Detection of Coliform group bacteria in water samples suggested a high probability of drinking water pollution, and it has long been a health issue there. Based on the results of this study, practicing the guideline for nosocomial infection control thoroughly in VHYL, improving the water supply system in aboriginal mountain area, and advanced health education are key points for effective control of shigellosis.