

Thesis Title Detection of Enteropathogenic Bacteria in AIDS Patients with
Diarrhea

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ABSTRACT

Bacterial diarrhea in AIDS patients has dramatically increased and led to diagnostic and therapeutic problems. Recently, the number of HIV/AIDS patients with diarrhea who attended at Bamrasnaradura Infectious Diseases Hospital (BIDH), Nonthaburi, Thailand has increased under routine surveillance. In this study, detection of enteropathogenic bacteria from the stool was carried out in 350 AIDS patients with diarrhea, compared with the control group of 350 non-AIDS patients with diarrhea by age and sex matched criteria who attended at BIDH, from May to December 1996. Of the total studied population, 79% (554/700) were males and 21% (146/700) were females. 91% of them were between 15-77 years old. The daily employee (labour) was found in the highest frequency of both groups and 85% of those had education lower than graduate degree. The isolation rates of bacterial enteropathogens which cause diarrhea in AIDS patients (17.4%) were significantly lower than those in non-AIDS patients (43.4%) ($p < 0.05$). The infection rates of *Salmonella* group B (19.7%; 12/61) in AIDS patients were significantly higher than those in non-AIDS patients ($p < 0.05$). In contrast, some enteropathogens including *Vibrio parahaemolyticus* (53.3%; 81/152), *Plesiomonas shigelloides* (27%; 41/152), *Aeromonas* spp. (19.1%; 29/152), and *V. cholerae* O1 (15.1%; 23/152) were found to be higher in non-AIDS ($p < 0.05$). Six of

eight isolates of enterotoxigenic *E. coli* (ETEC) were positive for *st1a/1b* by PCR and 5 of 6 were found in non-AIDS group. While 8 isolates of enteroinvasive *E. coli* (EIEC) positive for *invE*, 6 of them were found in AIDS group. Only one isolate of enterohaemorrhagic *E. coli* (EHEC) positive for *vt1/2* was found in an AIDS patient. About 84.4% (27/32) of *V. parahaemolyticus* from both groups produced hemolysin by modified Elek test. In non-AIDS group, 86.7% (26/30) of *V. parahaemolyticus* were positive for *tdh* and 3% (1/30) were positive for *trh*. All 4 isolates positive for *trh* were also positive for urease reaction. Twenty-three of *V. cholerae* O1 strains positive for *ctxA* were all isolated from non-AIDS patients. In addition, the isolation rates of other organisms, such as *Staphylococcus* coagulase positive (16%), *Proteus mirabilis* (15%), *Clostridium difficile* (11%), and *Candida albicans* (7%) were more commonly found in 100 AIDS patients with diarrhea than those in non-AIDS group ($p < 0.05$).

Anorexia (76%) and weight loss (61%), were the most common gastrointestinal symptoms found in AIDS patients with diarrhea while abdominal pain (85%), vomiting (42%), nausea (36%) were the most common symptoms found in non-AIDS group. The pattern of drug resistance found in AIDS patients with diarrhea was similar to that in the non-AIDS control group. Ampicillin, tetracycline and cotrimoxazole were the most common resistant agents. Except for diarrheagenic *E. coli*, all organisms of both groups were susceptible to gentamicin. Enteropathogens from both groups were also sensitive to norfloxacin, nitrofurantoin and nalidixic acid in high percentage. Therefore, the frequency of causative agents of diarrhea, their virulence factors, clinical manifestations, and drug resistance patterns among AIDS patients in this study should be additional useful information for management of bacterial diarrhea and further research on the pathogenesis of HIV infection.