

### DISCUSSION

The media used in this study were found to be the most effective combination of media. More than 95 percents of Salmonella, Shigella and enteropathogenic Escherichia coli organisms could be isolated from primary plate cultures. The Eosin Methylene Blue agar, Xylose Lysine Desoxycholate and Bismuth Sulfite agars were inferior. Those selected media used gave good results as recommended by Edwards and Ewing (12), and Bailey (1). No single medium could be used for all purposes. Tetrathionate broth was not used in this study because it was proved to be inferior (41). From the prior report, Shigellae were the enteropathogens isolated most frequently among the Americans in Thailand while Salmonellae were isolated most frequently from the Thais (30). It was found that during the years 1963 to 1967, there were 7.7 percent of Salmonella, 2.3 percent of Shigella and 10.7 percent of pathogenic Escherichia coli were isolated from the stool specimens of the patients in Bangkok. This study also gave similar results, Salmonella was 8.2 percent, Shigella was 4.6 percent and enteropathogenic Escherichia coli was 11.6 percent.

The serotype identification of Salmonella isolates were restricted, since the Salmonella were available only polyvalent and group specific antisera. The biotype Salmonella typhi belonging to group D were the most frequently found (31.7 percent). These indicated that

the incidence of typhoid fever in Bangkok during the period of study was higher than paratyphoid fever. The incidence of Shigella flexneri which was agglutinated with Shigella flexneri (1-6, X and Y) antiserum, was highest among Shigella isolates (52.1 percent). The enteropathogenic Escherichia coli (30) in Thailand previously observed was of serotype O 125 : B 15. It was different in this present investigation for 41.0 percent of serotype O 25 : B 19 : B 23 was isolated.

Five out of all isolates were found to be Vibrio El Tor of "Ogawa" serotype. It is of interest that Vibrio El Tor has been present in the community throughout this period without the outbreak of cholera.

Table 10 shows the age group distribution of the enteropathogenic isolates. The highest incidence of the causative agents of diarrhea in newborns and children was pathogenic Escherichia coli, whereas in adults it was not so. On the other hand Shigellae were isolated mostly in children and some from adults, but there was no evidence in newborns. Salmonellae were distributed among the three age groups, however, the incidence definitely high in children. The Vibrios were isolated only from children and adults. The incidence of these El Tor Vibrio infection would be higher than this study, if the attention had been made at the beginning. Diagnostic laboratories should pay attention to this Vibrio, for they are not uncommon.

Proteus isolated from newborns might be the cause of diarrheal disease, but the pathogenicity of this organisms is still doubtful.

The plate dilution method for determining susceptibility to antimicrobial agents is superior to disc-agar method; for the minimal inhibition concentration (MIC) can be clearly demonstrated, the diffusion of drugs through agar is not interfered. The amount of organism used are regular and more than 20 isolates can be tested in one plate. The disc agar method is useful for the routine work but the plate dilution is more standard.

Noyes, Benjadol and Taylor (30) isolated Salmonella, Shigella and enteropathogenic Escherichia coli from the cases of diarrhea in Bangkok and performed their susceptibility to antimicrobial agents. They found that in 1963 oxytetracycline appeared to be the most effective antimicrobial against Salmonella and enteropathogenic Escherichia coli. The wide-spread use of tetracycline starting in 1964 coincided with an abrupt decrease in the isolates sensitive to oxytetracycline. In the period of the study, (1972-1973) the resistance of the organisms in this group against oxytetracycline was obviously demonstrated (Diagram 3-7) same evidence was seen with chloramphenicol. There were no more effect on Salmonella, enteropathogenic Escherichia coli and less effect on Shigella. Other less effective antimicrobials were erythromycin and kanamycin.

For Salmonella, Shigella and pathogenic Escherichia coli, co-trimoxazole, furazolidone, ampicillin and nalidixic acid were the most effective agents. Colimycin which was the best agent against all the three group in 1967 (30) was found to be a little less effective especially to Salmonella group. However, colimycin was still good, it might be because of its high cost in Thailand.

About 80 percent of enteropathogens were susceptible to neomycin which has been widely used in Thailand. Most of the use of drug therapy was based on cost rather than medical judgement because of many patients sought medical attention only after self-medication was unsuccessful.

The sensitivity patterns of antimicrobial agents have been changed from year to year. The fact is that new antimicrobial agents are effective against the microorganisms, and at the low cost, while well-known drugs are less effective. The in vitro susceptibility test is therefore necessary and it will be valuable for chemotherapeutic treatment.

