

CHOLERA RESEARCH LABORATORY

Technical Committee Meeting
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RESEARCH SUMMARY

- Title : Epidemiology of E. coli diarrhea
- Author(s) : Dr. George Curlin, Dr. James McLaughlin, Dr. David Nalin,
Dr. Mizanur Rahman
- Objectives : To describe the epidemiology of enterotoxigenic E. coli (ETEC) diarrhea in rural Bangladesh with respect to age, sex, season and clinical presentation.

Significance: Fewer than 50% of diarrheas at the CRL are diagnosed. Diarrheal disease is a significant cause of morbidity and efforts to treat adequately and undertake preventive measures often require knowledge of specific etiology. ETEC diarrhea has been shown to be a significant portion of diarrheal disease in the developing world and in particular in Bengal. We must better define the scope of morbidity and develop adequate treatments.

Current Status

of work : The 1974 toxoid field trial patients presenting to the outpatient and hospital divisions of the Matlab hospital from whom no known pathogen was isolated were tentative candidates for ETEC diarrhea. The MacConkey's plates were forwarded to Dacca where 10 E. coli organisms were pooled and assayed for heat-labile (LT) toxin using the Chinese hamster ovary (CHO) cells. Only patients included in the toxoid field trial were candidates for ETEC diagnosis. The data demonstrate rising attack rates with age for those patients from the hospital which is consistent with earlier data published from Matlab by Robert Ryder. However, in the first attempt to study outpatient, milder diarrheas it was discovered the attack rates were similar for 1-4 year-olds and adult females. ETEC diarrhea occurred throughout the year but the epidemic peak was, as expected, during the spring months following the cholera epidemic. In this study only a handful of patients were studied for heat-stable (ST) toxin.

Future Plans: We are considering continuing to make an observation of ETEC diarrhea on a sample of all patients presenting at Matlab using the same basic epidemiological approach as outlined above. However, we intend to implement the infant mouse assay for ST. We also intend to implement quantitative assessment of dehydration to document any difference in the clinical status of children and adults with this diarrhea.

For Presentation

For Conference & Consultation