

Results: The preliminary results showed that the patients with acute cholera had significantly higher faecal concentrations of TBARS than had the healthy volunteers ($9.56 \pm 4.41 \mu\text{mol/l}$ for cholera patients vs. $4.03 \pm 1.86 \mu\text{mol/l}$ for the controls). This observation indicates that patients with active cholera may be associated with varying degrees of oxidative stress probably due to toxin-induced alteration of mucosal metabolism involving xanthine production leading to loss of fluid and electrolytes in the diarrhoeal stool.

Conclusions: Further studies will be required to characterize the metabolic abnormalities in cholera patients which may have important therapeutic implications.



Survival Potential of Non-Culturable *Vibrio Cholerae* O1 by Laboratory Microcosms Using Polymerase Chain Reaction and Fluorescent Antibody Methods

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Objective: Assess the survival potential of *V. cholerae* O1 using conventional cultural, fluorescent antibody and recently developed polymerase chain reaction techniques. In Bangladesh, cholera is endemic in certain areas and flares into seasonal epidemics. *V. cholerae* O1 is one of the causative agents of cholera. The survival potential of *V. cholerae* O1 was carried out in various environmental samples by using conventional techniques.

Methods: The strain *V. cholerae* O1 biotype El Tor serotype Ogawa was used in this study carried out at the ICDDR,B's laboratories in Dhaka, Bangladesh. A measured inoculum of about 10^5 *V. cholerae* O1 per ml was added to 100 ml autoclaved pond water in a 500-ml conical flask, mixed and stored at room temperature. Culturable cells were counted on gelatin agar (GA) and taurocholate tellurite gelatin agar at various time intervals until the bacteria were no longer culturable.

Results: The non-culturable *V. cholerae* O1 was detected by fluorescent antibody and PCR techniques. The culturable *V. cholerae* O1 was isolated up to 44 days from the pond water microcosms. The non-culturable *V. cholerae* O1 was detected up to 7 weeks by FA and PCR techniques after they lost their culturability.

Conclusions: The non-culturable stage reported here for *V. cholerae* O1 is significant for understanding the epidemiology of cholera because the non-culturable state of *V. cholerae* O1 may pose health problems. Volunteer studies have shown that non-culturable *V. cholerae* O1 became culturable in volunteers intestine. This study demonstrated the survival of non-culturable *V. cholerae* O1 in surface water which may be important from the view point of public health.



Cholera Toxin Stimulates Absorption of D-Glucose from the Adult Rabbit Small Intestine in Vivo

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Objective: Determine the effects of purified cholera toxin (CT) on intestinal absorption of glucose. Glucose is known to stimulate intestinal sodium absorption which provides the basis for the glucose-containing oral rehydration solution for the treatment of diarrhoea. Although this physiologic mechanism is well-preserved during severe cholera, the effects of purified cholera toxin on intestinal absorption of glucose itself has not been evaluated.