Serum Vibriocidal Antibody Responses in Patients With Cholera Due to Vibrio Cholerae O139 And O1

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Objective: Determine the vibriocidal antibody response in patients with cholera due to V. cholerae O139 compared to that in patients with V. cholerae O1.

Methods: Severe dehydrating cholera is now known to be caused by strains of V. cholerae O139 in addition to V. cholerae O1. Previous studies have shown that the antibacterial antibody response using the vibriocidal antibody assay is a useful proxy measure of the mucosal immune response generated after infection with V. cholerae O1 or after vaccination. The present study determined the vibriocidal antibody response in patients with cholera due to V. cholerae O139 (n=33) and compared it with the response in patients with V. cholerae O1 (n=18) infection. Vibriocidal antibodies were measured using strains of V. cholerae O139 and V. cholerae O1 and serum samples collected from patients early after onset of disease and at follow-up on day 7, 11 and 22. Because of the possession of a capsule by V. cholerae O139, which confers resistance to serum killing, the traditional vibriocidal assay for V. cholerae O1 was modified for V. cholerae O139 by increasing the concentration of complement and decreasing that of bacteria. For the assay, two-fold dilutions of serum were tested against the homologous and heterologous O-serogroup and a four-fold or greater increase in titre was used in signifying seroconversion. The Wilcoxon’s matched pairs test was used for determining statistical difference in vibriocidal response in patients after onset of cholera.

Results: Patients with cholera due to V. cholerae O139 had a 46-fold increase in response to the homologous serogroup, which was highly significant (p<0.0001), whereas little or no response was detected against V. cholerae O1. A similar response (55-fold) to the homologous serogroup was seen in patients with V. cholerae O1 infection (p<0.0001) with no response to V. cholerae O139.

Conclusions: The vibriocidal antibody assay can also be used for measuring the immune response generated after cholera due to V. cholerae O139. These results also demonstrate that the vibriocidal antibody response is serogroup-specific suggesting that for a vaccine to be effective, it should possess protective antigens from both V. cholerae O139 and V. cholerae O1.

Does the Family Planning Programme Influence Desired Fertility in Bangladesh?

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Objective: Examine if the family planning programme has had any influence on desired fertility levels in Bangladesh.

Methods: A conceptual framework proposed by Easterlin (1975), and illustrated by Cleland, Phillips, Amin, and Kamal (1994), was imputed in explaining the achievement of family planning programme to reduce fertility in Bangladesh. The framework indicates that family planning programme can affect a couple's desire for children. Rural samples from the Contraceptive Prevalence Surveys of 1983 and 1991 that represent national data were analyzed to predict desired fertility, contraceptive use, and unmet contraceptive need. Effects of factors that capture programme interventions (home visits by family planning workers and women's knowledge of modern contraceptive methods), socioeconomic conditions, and regional variations were estimated in logistic regression models.

Results: Programme variables were not associated with desired fertility but were strongly related to contraceptive use and unmet need for contraception. Desired fertility was lower among the educated mothers and fathers. Women who worked for monetary income, who were members of NGOs, or who had higher mobility had lower desired fertility. Poorer women and Hindu women had lower desired fertility than better off or Muslim women. The results of the