

PREDICTABILITY OF O1 CHOLERA EPIDEMICS IN PERSONS YOUNGER THAN 10 YEARS USING CLIMATE DATA IN BANGLADESH

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Abstract

Background Although many studies have suggested a correlation between climate and diarrhoeal diseases epidemics, little is known about the predictability. To investigate the predictability of epidemic O1 cholera in patients younger than 10 years by using climate data in Dhaka City, Bangladesh, we carried out time-series analysis.

Methods Data on O1 cholera patients younger than 10 years from 1983 through 2002 at a hospital for low income people in Dhaka City, and climate data, maximum and minimum temperatures and rainfall recorded in Dhaka City from 1983 through 2001 were used for autoregression.

Results The numbers of patients were well predicted by autoregression: 39.4% of the all predicted numbers were within 0.8 and 1.2 times the observed number of patients during the study period. However, the prediction depended largely on the residue in 1 month before.

Conclusion Our method will be useful for predicting epidemics in the near future. Further investigations are needed to clarify the mechanisms of epidemics and to make our method a practical early warning system for epidemics of cholera.