

An Outbreak Investigation of Viral Hepatitis E in Siddhpur Town, Patan District, North Gujarat, India.

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An Outbreak Investigation of Viral Hepatitis E in Siddhpur Town, Patan District, North Gujarat, India

Krunal Modi¹, Jayshri Dund², Rakesh Ninama¹, Gaurishankar Shrimali³

¹Assistant Professor, Community Medicine Department, GMERS Medical College, Patan, Gujarat.; ²Tutor, Microbiology Department, GMERS Medical College, Gotri, Baroda.;

³Assistant Professor, Microbiology Department, GMERS Medical College, Patan, Gujarat. Received: 04/09//2014 Revised: 26/09/2014 Accepted: 26/09/2014

Abstract

Aims and Objectives: The objectives were: (1) To study the distribution of hepatitis cases, to identify the etiological agent, source of outbreak, and mode of transmission with follow up of cases; (2) To initiate the control measures based on the outbreak investigation.

Material and Methods: The case definition used was: those cases that have/had jaundice with at least one of the following symptoms: Dark urine, fever, pain in abdomen, vomiting, and loss of appetite, elevated serum aminotransferase levels, since June 2014 in Siddhpur urban area. Data were collected through (1) a door-to-door survey and (2) hospital records. Information regarding the date of onset, age, sex, place of residence, treatment, and laboratory investigation was collected from 16 hospitalized patients. The distribution of cases was analyzed using time, place, and person characteristics. Five blood samples were taken for serological survey from jaundice cases for immunoglobulin M (IgM) antibody for hepatitis A virus (HAV) and hepatitis E virus (HEV). We conducted environment investigation to find out the source of contamination of water supply. Water samples were collected to test residual chlorine both from distribution and household level.

Results: Total 8500 individuals were surveyed; of which 130 patients of hepatitis E were identified with the attack rate of 1.53%. The difference in attack rate of hepatitis of both the sexes was statistically significant ($P < 0.001$). The attack rate was significantly higher in age groups >12 years of age ($P < 0.001$). Out of 10 serum samples, 7 were found positive for HEV IgM antibodies. Environmental investigation also confirmed the sewage contamination of drinking water in the distribution system.

Conclusion: The outbreak was due to hepatitis E virus due to contamination of drinking water, valve leakages and inadequate chlorination of water. We recommended a temporary alternative water supply, repair of the leakages, and water quality surveillance with proper chlorination. The recognition of early warning signals, timely investigation, and application of specific control measures can control the future outbreaks

References

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