

Abstract

Risk Factor Assessment of Hepatitis-E Outbreak at a Military Training Center - Karachi, Pakistan 2017

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Background: In Pakistan hepatitis E occurs in both sporadic and epidemic forms. On 30th March 2017, 30 suspected cases of hepatitis were reported from a military training center in Karachi.

Objective: A team of FELTP fellows was deputed to assess the magnitude, evaluate risk factors and recommend control measures.

Methods: The investigation was carried out in the military training center in Karachi. A case-control study was conducted. A case was defined as sudden onset of jaundice with or without fever, nausea, vomiting, loss of appetite, malaise, diarrhea and abdominal pain plus presence of Hepatitis E IgM on ELISA in a resident of military training center from 9th March to 12th May 2017. Cases were identified by reviewing hospital records and active case finding. Age-matched controls were selected from the same center. Water samples were tested for presence of coliforms. Frequencies were ascertained, attack rates calculated, and odds ratios were determined at 95% confidence interval and *P* value of less than 0.05.

Results: A total of 79 cases were identified (49 through active case finding). All cases were male with mean age of 22 years (range 18-45 years). Overall attack rate was 9% with most affected age group of 18-22 years (attack rate of 12%). Out of 79 cases 62 consumed tap water (OR 2.28, 95% CI 1.14-4.58). Consumption of filtered water from coolers and hand washing was shown to have a protective effect. Water samples were positive for coliforms. On environmental assessment water pipelines were seen to be running parallel to the sewage line

Conclusions: Consumption of contaminated tap water was the most probable cause of the outbreak. Cross contamination between the water and sewage lines was the possible source. Replacement of old pipelines and decontamination of drinking water before consumption was also recommended.

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