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Outbreak of hepatitis E in Sambalpur, Odisha in 2014

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Hepatitis E virus (HEV) is the leading cause of acute viral hepatitis in developing countries where fecal contamination of drinking water is common. In November 2014, Sambalpur district reported an outbreak of hepatitis E. We defined a case of a person with acute onset of jaundice and at least one of six symptoms (fever, dark urine, anorexia, malaise, extreme fatigue or right upper quadrant tenderness) from 1st May 2014-30ᵗʰ December 2014 residing in Sambalpur municipality. We conducted a house to house survey to find cases and did an unmatched case control study. Controls were selected from neighborhood. We collected blood and water samples. Among 365 patients, including 7 deaths, 244 (67%) were in the 15-44 year age group and 239 (66%) were male. Illness onset dates ranged from 17 May 2014 to date of investigation. Among 19 blood samples, 12 tested positive for IgM anti-HEV; all were negative for IgM anti-hepatitis A virus. Among 113 cases and 113 controls, consuming non-purified water (odds Ratio (OR) 1.9, 95% Confidence Interval (CI) 1.1-3.2), drawing water with mug/ladle from storage container (OR 2.6, 95% CI 1.2-6.1) and eating from street side vendor OR 2.0, 95% CI 1.2-3.5) were significantly associated with illness. Among 24 water samples around the municipality, 12 were positive for fecal coliforms. In outbreak, hepatitis E was associated with common practices and personal habits. We recommend purifying water such as through boiling, using containers with taps for storing drinking water and avoiding food from street vendors.

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Feasibility of using multiple locus variable number tandem repeat analysis for epidemiology study of *Vibrio parahaemolyticus* infections

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Molecular typing can provide critical information for detecting outbreaks and tracking the source caused by *V. parahaemolyticus*. In this study, we described the development and evaluation of an optimized multiple locus variable number tandem repeat analysis (MLVA) for characterization of *V. parahaemolyticus*. The discriminatory power of MLVA was compared with that of PFGE by typing 73 sporadic isolates. Epidemiologic concordance was evaluated by typing 23 isolates from five epidemiologically well-characterized outbreaks. The optimized MLVA were applied in early warning and tracking source of *V. parahaemolyticus* infections. There was no significant difference in the discriminatory power of PFGE and MLVA with 6 or 8 VNTR loci for sporadic isolates. All isolates within an outbreak were indistinguishable by MLVA with 6 loci with the exception of 3 isolates from one outbreak that had a different type than that of the other 4 isolates from that outbreak. We applied the MLVA with 6 loci to detect two suspected outbreaks. One of suspected outbreaks with same PFGE pattern can be distinguished by MLVA. Although follow-up investigation identified both suspected outbreaks had no epidemiological concordance, MLVA could decrease the frequency of initiating an epidemiological survey. The MLVA type of isolates from one of outbreaks from different districts was the same as that of the shrimp. The data from laboratory and subsequent epidemiological investigation suggested this outbreak may be associated with consumption of shrimps. In conclusion, these results indicated the optimized MLVA may be a promising tool for early warning and epidemiological surveillance of *V. parahaemolyticus* infections.

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Notes:

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