Hemolytic Uremic Syndrome Associated with Escherichia coli O8:H19 and Shiga Toxin 2f Gene

Ingrid H.M. Friesema, Mandy G. Keijzer-Veen, Marja Koppejan, Henk S. Schipper, Arjanne J. van Griethuysen, Max E.O.C. Heck, and Wilfrid van Pelt

Author affiliations: National Institute for Public Health and the Environment, Bilthoven, the Netherlands (I.H.M. Friesema, M.E.O.C. Heck, W. van Pelt); University Medical Center Utrecht, the Netherlands (M. G. Keijzer-Veen, H.S. Schipper); and Gelderse Vallei Hospital, Ede, the Netherlands (M. Koppejan, H.S. Schipper, A.J. van Griethuysen)

Address for correspondence: Xiao Zheng, National Institute for Communicable Disease Control and Prevention, Chinese Center for Disease Control and Prevention, PO Box 5, Changping, Beijing 102206, People’s Republic of China; email: zhengxiao@icdc.cn

DOI: http://dx.doi.org/10.3201/eid21001.140515

To the Editor: Gastroenteritis caused by Shiga toxin–producing Escherichia coli (STEC), associated with hemorrhagic colitis and hemolytic uremic syndrome (HUS), has been identified as a major health problem in Europe: 20 were registered as STEC O8; HUS did not develop in these case-patients (4). HUS developed in 2 patients infected with STEC O8 (O8:H2; O8:H19) in Germany during 1996–2000 (5); these isolates and all other isolates from HUS and non-HUS case-patients in this period tested negative for stx2f. During 2008–2011, 87 stx2f STEC infections were registered in the Netherlands (3). These infections were relatively mild; no HUS cases were registered. The virulence genes seen in the isolate of the described case, stx2f and eae, but no hly or other toxin genes, were also seen in 97% of stx2f STEC infections reported in the Netherlands (3). Besides being detected in humans, stx2f STEC has only been detected in pigeons (6).
The cause of the severity of disease in this stx_{2f} STEC case and the source of the infection could not be determined. The parrot in the hotel in Turkey could have been the source if birds are a reservoir of stx_{2f} STEC. Conversely, the uncooked beef and barbecue cannot be ruled out, because O8:H19 has been found in cattle, pigs, and sheep (7). This case shows that STEC subgroups known to cause relatively mild disease can occasionally cause severe disease and that surveillance based upon a small group of serotypes underestimates the number of severe STEC infections and increases the chance of missing emerging serotypes.

To the Editor: In the March 2014 issue of Emerging Infectious Diseases, Alam et al. reported a survey of water sources in Haiti conducted to isolate Vibrio cholerae (1). Each month from April 2012 through March 2013, they sampled 15 sites at 3 rivers and 1 estuary in West Department. From 179 water samples and 144 aquatic animals and plants, they obtained 7 V. cholerae O1 isolates, including 3 ctx-positive toxigenic strains.

Unfortunately, the results for all 7 V. cholerae O1 isolates were aggregated, and no details were provided about the exact time and location of collection of samples corresponding to the 3 ctx-positive strains. The authors posed the question of whether V. cholerae O1 has become established in environmental reservoirs in Haiti, subsequently warning that “as long as the causative microorganism is present in the environment, eradication of the disease will not be possible.”

However, after challenging their results with more accurate epidemiologic data, we found that these 3 ctx-positive toxigenic strains could more likely have been present in the sampled rivers as a result of recent fecal contamination (Figure, http://www.ncbi.nlm.nih.gov/Bookshelf/Book/66656/66656.html). Indeed, many cholera cases were reported in the corresponding communal sections (i.e., the smallest Haitian administrative unit, average 25 km²) when the samples containing the 7 V. cholerae O1 isolates were collected. In this context of an ongoing cholera epidemic associated with persisting rainfall (Figure), generalized open-air defecation inevitably leads to contamination of water sources. It is therefore impossible to determine whether V. cholerae—positive rivers constitute perennial reservoirs of the bacteria or whether they act only as transient vectors of the pathogens.

The recent dramatic decrease in cholera transmission may provide a good opportunity to address this issue (2). We thus encourage Alam et al. to continue the search for ctx-positive toxigenic V. cholerae O1 strains in surface waters, especially during cholera-free periods.

Address for correspondence: Ingrid H.M. Friesema, RIVM-EPI, Centre for Infectious Disease Control, National Institute of Public Health and the Environment (RIVM), PO Box 1, 3720 BA Bilthoven, the Netherlands; email: ingrid.friesema@rivm.nl

References

Monitoring Water Sources for Environmental Reservoirs of Toxigenic Vibrio cholerae O1, Haiti

Stanislas Rebaudet and Renaud Piarroux

Author affiliation: Aix-Marseille Université, Marseille, France

DOI: http://dx.doi.org/10.3201/eid2101.140627

Monitoring Water Sources for Environmental Reservoirs of Toxigenic Vibrio cholerae O1, Haiti

Stanislas Rebaudet and Renaud Piarroux

Author affiliation: Aix-Marseille Université, Marseille, France

DOI: http://dx.doi.org/10.3201/eid2101.140627

References