

Antimicrobial Use is not a Risk Factor for Hemolytic.Uremic Syndrome after *E. coli* 0157 Infection: Results of a 1996-1997 FoodNet Study

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Background: Hemolytic uremic syndrome (HUS) is a life-threatening complication of infection with Shiga toxin-producing *E. coli*, including *E. coli* O 157. Some investigations have suggested that treatment of *E. coli* 0157 infections with antimicrobials (and particularly with trimethoprim-sulfamethl [TMP/SMX]) may contribute to subsequent development of HUS. The possible causal role of antimicrobials has been of particular concern because treatment could in advertently harm the patient.

Methods: Since 1996, health departments in five states (Georgia, California; Connecticut, Minnesota, and Oregon) have conducted active surveillance for *E. coli* 0157 infections through the Emerging Infections Program's Foodborne Diseases Active Surveillance Network (FoodNet). A standard questionnaire was used to collect information on patient characteristics, symptoms, exposures to possible vehicles, use of antimicrobial agents, and clinical outcome on all culture-confirmed cases that were identified during a one-year period starting in 1996.

Results: Of 372 culture-confirmed *E. coli* 0157 cases identified, 26 (7%) progressed to HUS. Complete antibiotic usage information was obtained for 293 (79%) *E. coli* 0157 cases. No specific antimicrobial agent taken after onset of diarrhea was associated with development of HUS: 14 (61%) of 23 persons with HUS and 154 (57%) of 270 without HUS had taken antimicrobials after onset of diarrhea. Patients who developed HUS were not significantly more likely to have received TMP/SMX than patients who did not develop HUS among persons who were able to identify what antimicrobial they took, one (13%) of 8 with HUS and 24 (19%) of 129 without HUS took TMP/SMX. Taking antimicrobials during the 4 weeks before onset of diarrhea was not related to subsequent HUS only 2 (10%) of 21 persons , who developed HUS and 22 (9%) of 259 persons who did not develop HUS had taken antimicrobials before onset of diarrhea. When the analyses were restricted to children under age 10, we still found no association between the development of HUS and the use of antimicrobials.

Conclusion: In this retrospective study, we found no association between the development of HUS and the use of any antimicrobial agent, including TMP/SMX, during or shortly before *E. coli* 0157 infection. Prospective studies were needed to further evaluate risk factors for progression to HUS, including the use of antimicrobial agents.

Suggested citation:

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