

# For Diarrheal Illness, Antibiotics Should NOT Be Prescribed Until Stool Results Are Positive - N E J M

In its June 29th issue, the New England Journal of Medicine released a final report entitled "The Risk of Hemolytic Uremic Syndrome after Antibiotic Treatment of Escherichia coli O157:H7 Infections," based on a prospective study of 71 children, 10 years old and under, who had diarrhea caused by *E. coli* O157:H7. The article had been released in May before its publication date because of its significant therapeutic implications.

In the study addressed by the article, nine of 71 children received antibiotics. Of those, five developed HUS (56%). The disease is characterized by thrombocytopenia, hemolytic anemia and nephropathy. Of the remaining 62 children who did not receive antibiotics, an additional five children developed S HUS (8%). Two of the children who developed HUS received trimethoprim-sulfamethoxazole (Septra/Bactrim), and three received cephalosporins.

According to the article, "the day of submission of the stool sample was the most common point in the illness at which antibiotics were prescribed ...." Development of HUS was also related to the initial white cell count:

White Cell Count	Percentage of Group Developing HUS
3200-8700/cc	0%
8800-11,800/cc	6%
11,900-14,200/cc	17%
14,300-24,600/cc	35%

However, antibiotic administration was independently associated with risk, even when white cell count and day of presentation were taken into account.

"Previous studies have implicated antibiotics as a catalyst for HUS, but this study in particular, shows a close tie between antibiotic treatment and hemolytic uremic syndrome," said Dr. Phillip Tarr, a pediatric gastroenterology expert on *E. coli* at Children's Hospital and Regional Medical Center in Seattle, Washington, and an author of the report. "Given results of other studies, we also recommend against treatment with antimotility drugs and narcotics because of the possibility of prolonging the disease and potentially increasing the likelihood of HUS. Imodium, Lomotil and Pepto-Bismol are examples of antimotility drugs.

"The American Academy of Pediatrics advises against prescribing antibiotics for childhood diarrheal illness without a confirmed stool culture," said Dr. Larry Pickering, Editor of the Red Book of the AAP and Director of the Center for Pediatric Research in Norfolk, Virginia. "Antimotility agents should not be used for childhood diarrheal disease. This study confirms our position."

In laboratory testing, application of antibiotics to *E. coli* O157:H7 has induced the release of Shiga-toxin, which causes HUS. Of the children in the study that developed HUS, four required dialysis, and seven received erythrocyte transfusions, platelet transfusions or both. None died. A copy of the abstract can be obtained at [www.ncbi.nlm.nih.gov/PubMed/](http://www.ncbi.nlm.nih.gov/PubMed/)