

Association between azithromycin therapy and duration of bacterial shedding among patients with Shiga toxin-producing enteroaggregative Escherichia coli O104:H4.

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Abstract

CONTEXT:

An outbreak of Shiga toxin-producing enteroaggregative Escherichia coli (STEC O104:H4) infection with a high incidence of hemolytic uremic syndrome (HUS) occurred in Germany in May 2011. Antibiotic treatment of STEC infection is discouraged because it might increase the risk of HUS development. However, antibiotic therapy is widely used to treat enteroaggregative E coli infection. In the German outbreak, a substantial number of patients received prophylactic azithromycin treatment as part of a therapeutic regimen with the C5 antibody eculizumab.

OBJECTIVE:

To analyze the duration of bacterial shedding in patients with STEC infection who did and did not receive oral azithromycin therapy.

DESIGN, SETTING, AND PATIENTS:

At a single center in Lübeck, Germany, 65 patients with STEC infection, including patients with HUS as well as STEC-infected outpatients without manifestation of HUS, were investigated between May 15 and July 26, 2011, and were monitored for a mean of 39.3 days after onset of clinical symptoms.

MAIN OUTCOME MEASURE:

Carriage of STEC after azithromycin therapy.

RESULTS:

Twenty-two patients received oral azithromycin and 43 patients did not receive antibiotic treatment. Among antibiotic-treated patients, long-term STEC carriage (>28 days) was observed in 1 of 22 patients (4.5%; 95% CI, 0%-13.3%) compared with 35 of 43 patients (81.4%; 95% CI, 69.8%-93.0%) who were not treated with antibiotics ($P < .001$). All 22 patients receiving azithromycin treatment had at least 3 STEC-negative stool specimens after the completion of treatment, and no recurrence of STEC was observed in these patients. As proof of principle, 15 patients who initially were not treated with antibiotics and were long-term STEC carriers were treated with oral azithromycin given for 3 days and subsequently had negative stool specimens.

CONCLUSION:

Treatment with azithromycin was associated with a lower frequency of long-term STEC O104:H4 carriage.

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