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Laboratory-based Surveillance of Paratyphoid Fever in the United States: Travel and Antimicrobial Resistance

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BACKGROUND: The incidence of paratyphoid fever, including paratyphoid fever caused by antimicrobial-resistant strains, is increasing globally. However, the epidemiologic and laboratory characteristics of paratyphoid fever in the United States have never been studied.

METHODS: We attempted to interview all patients who had been infected with laboratory-confirmed Salmonella serotypes Paratyphi A, Paratyphi B, or Paratyphi C in the United States with specimens collected from 1 April 2005 through 31 March 2006. At the Centers for Disease Control and Prevention (CDC), isolates underwent serotype confirmation, antimicrobial susceptibility testing, and pulsed-field gel electrophoresis typing.

RESULTS: Of 149 patients infected with Salmonella Paratyphi A, we obtained epidemiologic information for 89 (60%); 55 (62%) of 86 were hospitalized. Eighty-five patients (96%) reported having travel internationally, and 80 (90%) had traveled to South Asia. Of the 146 isolates received at the CDC, 127 (87%) were nalidixic acid resistant; nalidixic acid resistance was associated with travel to South Asia (odds ratio, 17.0; 95% confidence interval, 3.8-75.9). All nalidixic acid-resistant isolates showed decreased susceptibility to ciprofloxacin (minimum inhibitory concentration, > or = 0.12 microg/mL). Of 49 patients infected with Salmonella Paratyphi B, only 12 (24%) were confirmed to have Paratyphi B when tested at the CDC. Four (67%) of 6 patients were hospitalized, and 5 (83%) reported travel (4 to the Andean region of South America). One case of Salmonella Paratyphi C infection was reported in a traveler to West Africa with a urinary tract infection.

CONCLUSIONS: Physicians should be aware of the increasing incidence of infection due to Salmonella Paratyphi A and treatment options given its widespread antimicrobial resistance. A paratyphoid fever vaccine is urgently needed. Continued surveillance for paratyphoid fever will help guide future prevention and treatment recommendations.

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