Carbapenemases are a growing concern worldwide since they threaten the efficacy of carbapenems, the most potent β-lactam antibiotics. Nonmetallocarbapenemase class A (NMC-A) was identified in 1990 from a clinical isolate of Enterobacter cloacae, and since its first report in France (1), this rare enzyme has been found only in the United States (Seattle, WA, and New York, NY), Argentina, and Finland (2–5). Herein, we describe for the first time in Colombia an E. cloacae isolate harboring an NMC-A carbapenemase.

In December 2009 in Barranquilla, Colombia, a 66-year-old woman presented to the emergency room with a 6-day history of abdominal pain, bloating, and vomiting. She was diagnosed with an intestinal obstruction and was subjected to an exploratory laparotomy. The histological examination of the sigmoid showed an invasive adenocarcinoma. After 4 days of empirical treatment with imipenem (500 mg intravenously every 6 h) for peritonitis, a culture of peritoneal fluid showed a carbapenem-resistant E. cloacae isolate (D5178). Despite multiple peritoneal lavages and antibiotic treatment with ciprofloxacin, meropenem, and then cepafepine, the patient showed no clinical improvement and died of a cardiac arrhythmia after 1 month of hospitalization.

Strain D5178 was sent to CIDEM’s laboratory as part of a bacterial resistance surveillance program that includes 14 hospitals throughout the country. Upon its arrival, species identification was corroborated using Vitek 2 (bioMérieux, Mercy l’Etoile, France), and antibiotic susceptibility testing was performed using the broth microdilution method (Sensititre panels; TREK Diagnostic Systems, Westlake, Ohio, USA), as well as the disk diffusion test. According to 2012 CLSI breakpoints (6), the isolate showed susceptibility to expanded-spectrum cephalosporins, cefepime, amikacin, aztreonam, piperacillin-tazobactam, polymyxin B, and ticarcillin and resistance to cefoxitin, ciprofloxacin, and all carbapenems (ertapenem MIC, 16 μg/ml; imipenem MIC, 32 μg/ml; meropenem MIC, 8 μg/ml; and doripenem MIC, 8 μg/ml). An extended-spectrum-β-lactamase (ESBL) double-disk confirmatory test was negative; however, a modified Hodge test and three-extended-spectrum-carbapenemase (2). PCRs used to screen for and meropenem toward clavulanate, suggesting the presence of an NMC-A carbapenemase in Colombia. Despite the increasing global dissemination of the plasmidic carbapenemases, a chromosomally encoded NMC-A carbapenemase is a rare finding. However, isolates carrying such an enzyme remain relevant, especially since NMC-A carbapenemases are able to hydrolyze carbapenems and their expression has proved to be inducible and coregulated with AmpC (8, 9). The continued emergence of novel mechanisms of resistance to carbapenems worldwide rephrases the need to continue screening for carbapenemases in order to determine the appropriate treatment and optimize antibiotic use.

REFERENCES