***Pseudomonas pseudoalcaligenes* Peritoneal Dialysis–Associated Peritonitis**

KEY WORDS: *Pseudomonas* species; gram-negative bacillary CAPD peritonitis; meropenem.

Editor:

Peritonitis is a known complication of chronic ambulatory peritoneal dialysis (CAPD). The organisms most commonly associated with CAPD infections are gram-positive cocci (skin flora) and uncommon gram-negative bacilli (dialysis fluids). *Pseudomonas aeruginosa* is the gram-negative bacillus that most commonly causes CAPD peritonitis (1–3), but a variety of low-virulence pseudomonads—that is, *Pseudomonas* species (formerly *Pseudomonas* and now renamed *Xanthomonas*, *Flavimonas*, and *Stenotrophomonas*)—have occasionally been reported as a cause of CAPD peritonitis (4–6). Here, we present the first reported case of CAPD peritonitis attributable to *P. pseudoalcaligenes* successfully treated with meropenem without peritoneal dialysis (PD) catheter removal.

A 29-year-old woman presented with abdominal pain that began 3 days before admission and persisted despite acetaminophen and oxycodone. Her past medical history included sickle-cell trait and end-stage renal disease. Physical examination was unremarkable except for abdominal distension. The patient's white blood cell count was $44.5 \times 10^3/\text{mm}^3$, and her platelet count was $500 \times 10^3/\text{mm}^3$. The PD effluent showed a white blood

cell count of $83 \times 10^3/\text{mm}^3$ (26% polymorphonucleocytes, 25% lymphocytes, 38% monocytes, 9% eosinophils). Blood cultures were negative, and an effluent culture grew *P. pseudoalcaligenes*, but this organism was not isolated from dialysate.

The patient was treated with meropenem for 7 days. After meropenem therapy, the abdominal pain resolved, and repeat cultures were negative. The patient continued on CAPD for more than a year without further complications.

P. pseudoalcaligenes is an aerobic gram-negative soil organism, motile by polar flagella, taxonomically placed in the *P. aeruginosa* group by 16S rRNA analysis. As with other members of the genus *Pseudomonas*, *P. pseudoalcaligenes* is a strict aerobe and able to metabolize unusual substrates—specifically, it is able to use cyanide as a nitrogen source. *P. pseudoalcaligenes* grows well on routine laboratory media.

Biochemically, *P. pseudoalcaligenes* is inert, oxidatively producing no acid from glucose. In fact, only fructose is oxidized by *P. pseudoalcaligenes*. The organism is able to grow at 42°C, hydrolyze arginine, and reduce nitrate to nitrite; it is also cytochrome oxidase–positive. Negative results are seen in tests for nitrogen gas, lysine decarboxylase, ornithine decarboxylase, urease, gelatinase, esculin, and starch hydrolysis. One of the emerging non-*P. aeruginosa* pseudomonads, *P. pseudoalcaligenes* is a rare opportunistic nosocomial human pathogen associated with aqueous fluids (7,8).

Other *Pseudomonas* species and related aerobic gram-negative bacilli have occasionally been reported to cause CAPD-associated peritonitis (4–6); however, we believe this case to be the first reported of *P. pseudoalcaligenes* CAPD-associated peritonitis successfully treated with parenteral meropenem without intraperitoneal antibiotics or PD catheter removal (9,10).

DISCLOSURES

All authors declare no financial conflict of interest.

J.E. Hage
P.E. Schoch
B.A. Cunha*

Infectious Disease Division and
Microbiology Laboratory
Winthrop-University Hospital
Mineola, New York, USA
State University of New York
School of Medicine
Stony Brook, New York, USA

*email: bacunha@winthrop.org

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doi:10.3747/pdi.2012.00112