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**Title:** Eravacycline for treatment of multiple-drug resistant Acinetobacter healthcare-acquired pneumonia: a case report

**Case Report:** Acinetobacter spp. are opportunistic gram-negative coccobacilli that employ multiple mechanisms of resistance against antimicrobials, making treatment challenging. Eravacycline is a broad-spectrum fluorinated tetracycline antibiotic approved in 2018 for treatment of complicated intra-abdominal infections. Eravacycline has activity against Acinetobacter baumannii, evident with a low in-vitro MIC of 1.0 mcg/mL. This case report examines the use of eravacycline for treating multidrug-resistant (MDR) A. baumannii pneumonia. A 53-year-old male patient with a past medical history of pulmonary adenocarcinoma and oral squamous cell carcinoma presented to the emergency department with a chief complaint of fever, chills, and a persistent productive cough one week following chemotherapy. The patient was placed on empiric vancomycin and cefepime. Sputum, blood, and urine cultures were obtained, all resulting in no growth. A chest X-ray was consistent for lung cancer without evidence of infection, and a WBC count of 4,200 cells/μL. Despite initially ruling out pneumonia, the patient’s condition continued to worsen and he was started on oxygen therapy. His antibiotic regimen was changed to intravenous meropenem, minocycline, and micafungin on day 4 of admission, as his WBC count increased to 18,500 cells/μL. On day 8 of admission, A. baumannii was isolated in a second sputum culture from 3 days prior, which was resistant to all tested antibiotics including his current regimen of antimicrobials. The patient also developed a Clostridiodies difficile infection, and fidaxomicin therapy was initiated. A drug request for eravacycline was received from a consulting infectious disease physician as the patient showed no signs of clinical improvement with persistent fever and leukocytosis. On day 9, eravacycline 86.7mg/250mL was initiated as an IV infusion every 12 hours, given as sole antimicrobial treatment for pneumonia. Within 4 days of receiving eravacycline monotherapy, the patient’s condition significantly improved as well as resolving diarrhea. He was taken off oxygen therapy, became afebrile, had resolution of abnormal breath sounds and cough, and his WBC normalized to 7900 cells/μL. After 7 days of eravacycline treatment, the patient was discharged from the hospital. The efficacy of eravacycline in treating this patient’s MDR Acinetobacter pneumonia warrants further investigation as current treatment options are limited.