VIM-2 carbapenemase-producing *Pseudomonas aeruginosa* in a patient from Port Elizabeth, South Africa

To the Editor: We report on the emergence of a multidrug-resistant *Pseudomonas aeruginosa* isolate in a public hospital in Port Elizabeth, Eastern Cape Province, South Africa (SA), where the lack of antibiotic stewardship may have been a contributing factor. A 76-year-old woman was admitted in February 2014 following a non-pathological hip fracture. She received no perioperative antibiotic prophylaxis and 4 days after hip replacement surgery she was started on cloxacillin (500 mg intravenous infusion 8-hourly) with suspected wound sepsis. Dislocation of the prosthetic joint necessitated a joint revision, after which she was discharged despite suffering from postoperative hip pain and bleeding from the surgical site. The antibiotic susceptibility profiles of *P. aeruginosa* isolated from superficial swab specimens prior to discharge revealed susceptibility to colistin only and resistance to ampicillin, amoxicillin-clavulanic acid, piperacillin-tazobactam, cefixime, cefuroxime, cefoxitin, cefotaxime, ceftazidime, cefepime, ertapenem, nitrofurantoin, trimethoprim-sulfamethoxazole, imipinem, meropenem, tigecycline, amikacin, gentamycin and ciprofloxacin. The Verona integron-mediated (VIM-2) carbapenemase encoding bla_{VIM-2} gene was also detected in the *P. aeruginosa* isolate by polymerase chain reaction and gene sequencing.

Following a deterioration of the surgical wounds, the patient was readmitted and started on cloxacillin (1 g intravenous infusion 6-hourly). Deep tissue specimens confirmed the *P. aeruginosa* prosthetic joint infection, and 3 months after the initial admission her prosthesis was removed and colistin (9 mU loading dose followed by 4.5 mU 12-hourly) and rifampicin were started. The colistin was stopped after 10 days because of nephrotoxicity. During the period of colistin administration, 7/17 doses were missed which contributed to the selection of colistin-resistant *P. aeruginosa* isolates. The patient's condition deteriorated with other complications such as gas gangrene on the right foot, pulmonary oedema, renal dysfunction and cellulits of the left shin and she died after 19 weeks in hospital.

The bla_{VIM-2} gene is located within the class 1 integron (In 56), which is also known to carry other genes that encode aminoglycoside-modifying enzymes.[1] *P. aeruginosa* VIM-2-producing isolates have caused nosocomial infections worldwide.[2] In SA, VIM has been found in *Klebsiella* spp. and *Providencia* spp. in the Gauteng region and *P. aeruginosa* in a Cape Town hospital, and *Acinetobacter baumannii* was reported in Pretoria.[3-5] To our knowledge this was the first report of the detection of a VIM-2-producing *P. aeruginosa* isolate in a patient from a Port Elizabeth public hospital.

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