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RESPONSE TO LETTER

Pan-drug-resistant and biofilm-producing strain of *Burkholderia pseudomallei*: first report of melioidosis from a diabetic patient in Yogyakarta, Indonesia [Response to Letter]

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Dear editor

We thank Dr David Dance et al from the International Melioidosis Society Committee for their interest in our case report. This is a response to their letter, which argued that our paper[1] does not support convincing identification of *Burkholderia pseudomallei*. In our study, we performed culture on Ashdown agar and identification by Gram staining (Gram-negative bacilli), positive oxidase test, and biochemical testing by API 20NE. The identity of the bacterium was subsequently confirmed with nested PCR, using two sets of PCR amplification primers from the variable region of the 16S rRNA gene of *B. pseudomallei*. As reported by Inglis et al, the API 20NE method identified only 37% of the *B. pseudomallei* isolates.[2] *B. pseudomallei* has a high degree of phenotypic plasticity and the colony morphology varies greatly within and between samples.[3,4] Therefore, the identification was continued by nested PCR of 16S rRNA, which has been shown to be highly sensitive,[5,6] being able to detect as few as two organisms present in the reaction.[6] However, we fully welcome the suggestion of Dance et al that further additional testing, eg, multilocus sequence typing, nucleotide sequence analysis, or PCR for the *TTS1* gene, is needed to verify the identification of *B. pseudomallei*. We have previously asked a member of the International Melioidosis Society Committee to review our identification method; however, that request was declined at the time.

Dance et al stated that the antibiotic susceptibility pattern of our clinical isolate of *B. pseudomallei* was unusual since it showed resistance against all antibiotics tested, particularly ceftazidime and meropenem. In our case, the patient had been suffering from chronic diabetic ulcer for more than 7 years, and had already been managed with various antibiotics, including cotrimoxazole, clindamycin, metronidazole, levofloxacin, ciprofloxacin, cefadroxil, meropenem, and cefixime. It has been shown that recurrent melioidosis correlates with increasing resistance to antibiotics owing to their frequent use.[7] In addition, ceftazidime- and carbapenem-resistant isolates have been reported in Malaysia, Australia, and north-east Thailand.[8–10] As mentioned in our report, reference guidelines for the threshold of the susceptibility assay for *B. pseudomallei* have not yet been published, and therefore the interpretation results were adjusted to the reference guidelines of

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Burkholderia cepacia, Pseudomonas aeruginosa, or Enterobacteriaceae. Indeed, there are fundamental issues, apart from the antibiotic susceptibility pattern, that complicate the management of *Burkholderia* infection. We should be very careful in our interpretation of the results, and therefore we agree that confirmation by measuring minimum inhibitory concentrations by the broth dilution or gradient diffusion method, as well as detection of resistance genes, is needed. Moreover, since ceftazidime and carbapenems remain the drugs of choice for management therapy of melioidosis, the development of resistance to these antibiotics should be monitored periodically.

The authors would like to thank Dr Dance et al for offering to perform confirmatory identification of this pathogen. We intend to explore further the burden of infection of *B. pseudomallei* in our community, including both clinical and environmental strains.

Disclosure

The authors report no conflicts of interest in this communication.

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