Abstract. Melioidosis is a severe bacterial infection caused by *Burkholderia pseudomallei*. Rapid antimicrobial therapy is necessary to improve patient outcome, which is aided by direct detection of *B. pseudomallei* in clinical samples. A drawback for all antigen assays is that the number of *B. pseudomallei* in blood usually falls below the achievable level of detection. We performed a prospective cohort study of 461 patients with 541 blood cultures to evaluate the utility of a pre-incubation step prior to detection of *B. pseudomallei* using a monoclonal antibody-based immunofluorescent assay (Mab-IFA). The Mab-IFA was positive in 74 of 76 patients with melioidosis (sensitivity = 97.4%), and negative in 385 patients who did not have blood cultures containing *B. pseudomallei* (specificity = 100%). The Mab-IFA could be a valuable supplementary tool for rapid detection. We recommend the use of the Mab-IFA to test blood cultures that flag positive in regions where melioidosis is endemic.
In total, 450 blood culture samples from non-melioidosis cases were culture-positive for one or more of the following organisms: 215 Gram-positive bacteria (Bacillus spp. [10], Enterococcus spp. [7], coagulase-negative staphylococci [112], Staphylococcus aureus [56], Streptococcus group A [7], Streptococcus group B [4], Streptococcus group D [11], other Streptococcus spp. [5], S. pneumoniae [2], and S. viridans [1]); 207 Gram-negative bacteria (Acinetobacter spp. [41], B. cepacia [1], Chromobacterium violaceum [1], Citrobacter spp. [1], C. diversus [2], Diptheroids [22], Enterobacter spp. [1], E. aerogenes [3], E. cloacae [9], Escherichia coli [57], Haemophilus influenzae [2], Klebsiella pneumoniae [21], Proteus mirabilis [1], Pseudomonas spp. [27], P. aeruginosa [8], Salmonella serogroup B [2], Salmonella serogroup C [4], and Salmonella serogroup D [4]); and 44 fungi (Candida spp. [8], C. albicans [7], Cryptococcus neoformans [13], and Penicillium marneffei [16]).

Detection of B. pseudomallei in blood cultures only after they have flagged as positive in an automated system is less optimal than direct detection in the clinical sample, but it provides a presumptive diagnosis 24–48 hours earlier than would be achieved using conventional culture and bacterial identification. We recommend the use of the Mab-IFA to test blood cultures that flag positive in those regions of the world where melioidosis is endemic. This use will increase reagent and labor costs, but one strategy to minimize costs is to limit testing to those samples that are positive for Gram-negative rods based on conventional Gram stain. The Mab-IFA could be a valuable supplementary tool for the rapid detection of B. pseudomallei infections, allowing earlier initiation of ceftazidime or imipenem therapy in patients with melioidosis.

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