Background. Bloodstream infections are a leading cause of mortality among hospitalized patients. Optimizing time to pathogen identification and receipt of appropriate antibiotic therapy significantly decreases mortality, morbidity, and length of hospitalization. Rapid diagnostic tests, such as Verigene, assist in the early identification of bacteria and resistance determinants from positive blood cultures; however, Verigene assays are limited to the detection of 13 gram-positive and 9 gram-negative bacteria.

Methods. The purpose of this study was to describe gram-negative and gram-positive aerobic bacteria identified from positive blood cultures with no Verigene target detected and to use the susceptibilities to create an antibiogram to assist in empiric antibiotic selection. A total of 2325 positive blood cultures resulted between January 2017 and October 2018 underwent Verigene testing.

Results. Of the 2325 isolates, 383 (16.5%), had no Verigene organism or resistance mechanism detected. Of these, there were 239 (62.4%) gram-positive isolates, 141 (36.8%) gram-negative isolates, and 3 yeast isolates with 96 unique organisms. Seventy-six (19.8%) of the organisms identified by standard culture, but not Verigene testing, are included on Verigene panel. We analyzed nine common antibiotics active against gram-negative organisms to determine percent susceptibilities against the isolated aerobic pathogens: amikacin (92.1%), cefepime (93.5%), ceftazidime (94.0%), ceftriaxone (79.7%), ciprofloxacin (88.5%), gentamicin (91.9%), levofloxacin (86.9%), piperacillin–tazobactam (83.8%), and tobramycin (85.5%). Additionally, four antibiotics active against gram-positive organisms were analyzed for gram-positive susceptibilities: cefotaxime (91.8%), ceftriaxone (98.1%), levofloxacin (82.5%), and vancomycin (91.8%).

Conclusion. The results of this study provide clinicians with antibiotic susceptibilities against organisms that were not identified through Verigene testing to guide timely and appropriate antibiotic therapy against gram-negative and gram-positive aerobic bacteria.

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