**Introduction**

The rapid multiplex PCR (rmPCR)-based FilmArray® blood culture identification (BCID) assay reduces time from positive blood culture to organism identification. Polymicrobial bacteremia is a known area of reduced diagnostic fidelity for BCID and remains incompletely characterized.

**Methods**

All cases of clinically confirmed polymicrobial bacteremia at a large academic single center from a 23-month period were evaluated in a retrospective cohort analysis (figure 1). Samples were assayed into BCID/blood culture concordant and BCID/blood culture discordant groups. Clinical characteristics of the two groups were compared, missed organisms were characterized, and changes in antimicrobial regimen in response to BCID results were characterized.

**Results**

A total of 207 samples were identified and studied. Overall, 49.3% (N=102) of polymicrobial cultures were incompletely identified by FilmArray® result. There were no significant group differences in comorbidity status, length of stay, mortality, or source between patients with polymicrobial bacteremia who had complete versus incomplete BCID identification (see table 1). In the 102 BCID discordant samples, 127 individual organisms identified on phenotyping but not on BCID were found. Many were commensal or low virulence organisms, but a total of 38 (29.9%) were identified as organisms potentially requiring prompt treatment, while 49 (38.6%) of organisms were on panel for the BCID assay (list of organisms is shown in Table 2). Of note, there were no instances of false negative results for Pseudomonas aeruginosa, Neisseria meningitidis, or Listeria monocytogenes, organisms requiring prompt therapy sometimes missing in empiric antibiotic regimens.

De-escalation from adequate empiric to inadequate step-down antibiotic coverage following incomplete BCID result occurred in only 8.8% (N=9) of cases (shown in table 3). No statistically significant association with mortality was seen among patients’ empiric coverage (p=0.07), although this analysis was limited by the small sample size.

**Conclusions**

BCID frequently results in incomplete identification of blood culture results in patients with polymicrobial bacteremia, but clinical characteristics and outcomes were similar to those of patients with accurate BCID identification. Clinical team de-escalation to inappropriate antibiotic coverage following return the BCID assay was uncommon and was not clearly associated with inferior outcomes.

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