00758 Impact of the Accelerate PhenoTest® BC Kit on time to results for pathogens from bloodstream infections: IOAS (Improving Outcomes and Antibiotic Stewardship) study experience of 4 hospitals

03. Bacterial susceptibility & resistance

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Background

Identification (ID) and antimicrobial susceptibility testing (AST) results guide treatment decisions in patients with bloodstream infections (BSI). Reducing time to ID and AST results is critical to outcome. The Accelerate PhenoTest® BC kit (AXDX) has addressed this need providing ID and AST directly from positive blood cultures for common BSI in approximately 7 hours.

Methods

Time to result for positive blood cultures was compared using data from 4 hospitals after the implementation of AXDX. Pre-AXDX standard of care (SOC) for ID and AST included MALDI-TOF MS (n=3 centers), VITEK® 2 (n=3), BD Phoenix® (n=2), Sensititre® (n=1), and Verigene® (n=1). Of the 4 hospitals included, 2 hospitals implemented AXDX for gram-positive, gram-negative, and yeast organisms. The other 2 hospitals implemented AXDX for gram-negative organisms only. Time to result metrics such as time to Gram stain, ID, and AST were evaluated from the common starting point of blood culture positivity (t=0). Distribution of organisms observed in SOC methods compared to the AXDX was also evaluated.

Results

A total of 760 positive blood cultures were included (n=385 in SOC, n=375 AXDX) of which 84.9% were monomicrobial in the SOC and 88.5% in the AXDX. In the SOC

group, 65.2% were gram-negative and 28.3% were gram-positive. In the AXDX group, 63.7% were gram-negative and 28.8% were gram-positive. Median times to blood culture positivity were similar in both groups [SOC 15.4 h (IQR, 13.0-21.6) vs. AXDX 15.1 h (12.9-19.4)]. Median times to Gram stain were also similar in both groups [SOC 0.5 h (0.8-1) vs. AXDX 0.5 h (0.15-0.83)]. Median time to ID in the SOC group was 26.6 h (14.8-37.8) and 2.5 h (2.1-2.9), $p<0.0001$ in the AXDX group. Median time to AST in the SOC group was 39.7 h (31.3-51.3) vs. 7.9 h (7.4-9.7), $p<0.0001$ in the AXDX group.

Conclusions

AXDX provided significant reductions in time to ID and AST. These reductions in time to ID and AST offer rapid results that are used to inform treatment decisions and optimize antimicrobial therapy in patients with BSI.