Utilization of blood cultures versus T2 Candida Panel for Candida species detection in a large community hospital

Rachel Chappell1,2, Pharm.D. candidate; Lauren Tepool1,2, Pharm.D. candidate; Taylor Steuber1,2, Pharm.D., BCPS; Jonathan Edwards1,2, Pharm.D., BCPS-AQID, BCGP; Adam Sawyer2, Pharm.D., BCPS, BCCCP

1Auburn University Harrison School of Pharmacy – Huntsville, Alabama
2Huntsville Hospital Department of Pharmacy – Huntsville, Alabama

Background

• Candidemia is associated with a mortality rate around 40% in hospitalized patients.
• Blood cultures have been the traditional methods of diagnosing candidemia; however, they can take 2-5 days to result and have a poor sensitivity of approximately 50%.
• The T2 Candida Panel is a rapid diagnostic test with higher sensitivity and specificity than traditional blood cultures with results in less than six hours.
• At Huntsville Hospital we have been evaluating the T2 Candida Panel utilization for the past 4 years.
• The continued utilization of blood cultures to detect fungal infections versus the T2 Candida Panel in patients with a suspected Candida bloodstream infection remains unclear.

Purpose

To evaluate the utilization of the T2 Candida Panel (T2CP) versus blood cultures (BC) in detecting and treating candidemia at a large community hospital.

Methods

• This study was a retrospective chart review that included patients with a BC positive for Candida species compared to patients with a positive T2CP from January 2012 to June 2018.
• Co-primary endpoints assessed included time to detection of candidemia and time to antifungal therapy.
• Additional endpoints included blood culture results, length of stay, and mortality.
• The student’s t-test and chi-square test were used to analyze parametric and non-parametric data, respectively.
• A p-value of <0.05 was considered statistically significant.

Results

• There was significantly higher percentage of Candida glabrata/krusei species identified in the T2CP group compared to the BC group.
• More patients in the T2CP group had an antifungal ordered at the time of the test.
• More patients in the BC positive group had concomitant bacteremia.
• The average time to detection of candidemia was significantly shorter in the T2CP group compared to BC group.
• The time to antifungal was also significantly shorter in the T2CP group compared to the BC group.
• The average length of stay was shorter in the BC positive group than the T2CP group.
• There was no difference in mortality between the two groups.

Discussion

• Of patients diagnosed with candidemia at our large community hospital, T2CP led to faster detection and initiation of antifungal therapy compared to blood cultures.
• No difference was observed in mortality between groups, though length of stay was shorter in patients diagnosed by blood cultures.
• Utilizing the T2 Candida Panel may optimize treatment initiation for patients with candidemia, though the effect on clinical outcomes remains to be determined.

References


The authors have nothing to disclose.