

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

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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

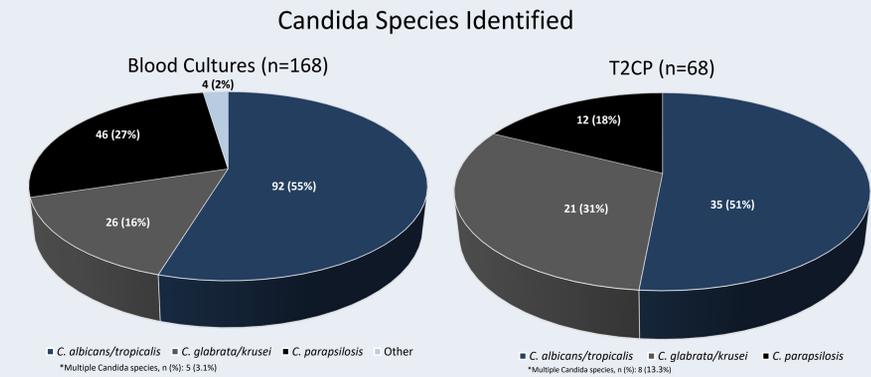
- There was significantly higher percentage of Candida glabrata/krusei species identified in the T2CP group compared to the BC group.
- More patients in the T2CP group had an antifungal ordered at the time of the test.
- More patients in the BC positive group had concomitant bacteremia.
- The average 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.

The T2 Candida Panel led to faster detection and initiation of antifungal therapy compared to blood cultures.



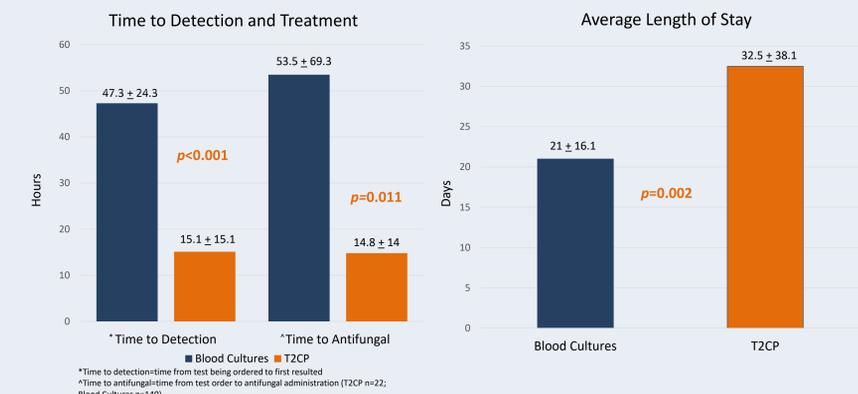
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Results



Select Characteristics of Population

Variable	Blood Culture Positive (n=163)	T2 Positive (n=60)	p-value
Age, years ± SD	59.4 ± 15	61.1 ± 17.4	0.474
Male, n (%)	93 (57.1)	35 (58.3)	0.864
Caucasian, n (%)	123 (75.5)	47 (78.3)	0.655
Mortality, n (%)	47 (28.9)	15 (25)	0.571
Broad Spectrum Antibiotics, n (%)	131 (80.4)	55 (91.7)	0.075
Bacteremia, n (%)	41 (25.2)	4 (6.7)	0.002



Discussion

- Of patients diagnosed with candidemia at our large community hospital, T2CP led to faster detection and initiation of antifungal 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

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- Pappas PG, Kauffman CA, Andes D, et al. Clinical practice guidelines for the management of Candidiasis. Clinical Infect Dis 2016; 62: 1-50.

The authors have nothing to disclose.