

Relationship of T2Candida Panel to Disease Severity, Mortality and Time to Therapy in Patients with Candidemia

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BACKGROUND

- Candidemia is a common hospital-acquired infection with high mortality
- Blood cultures (BC) have poor sensitivity (50%) and slow turnaround time (2-5 days)
- T2Candida Panel uses nuclear magnetic resonance (T2MR) to detect 5 species of *Candida* from whole blood in < 6 hours with a sensitivity of 91.1%

RESULTS

- 36 of 139 patients (26%) with candidemia had both a BC and T2MR performed within 24 hours of diagnosis
 - 8/36 (22%) were concordant (BC+/T2MR+)
 - 28/36 (78%) were discordant: 23 BC-/T2MR+ and 5 BC+/T2MR-
- APACHE II scores and 30-day mortality rate between BC+ and T2MR+ patients were not significantly different (p -values 0.06 and 0.29, respectively)
- Time to initial therapy (TTT) between BC+ and T2MR+ patients was statistically significant (1.6 vs 0.1 days, p -value < 0.01)

	TOTAL (N)	APACHE II SCORES	MORTALITY	TTT (DAYS)
BC+	112	13.6	0.36	1.6
T2MR+	35	16.4	0.46	0.1
p -value	-	0.06	0.29	<0.01

TABLE 1: BC+ vs. T2MR+ groups

METHODS

- Retrospective analysis of 139 patients with candidemia at UAB Medical Center during 2016
- Candidemia was defined by either a positive BC (BC+) or a positive T2MR (T2MR+)
- APACHE II scores, 30-day mortality and time to initiation of therapy (TTT) were compared between patients with positive BC+ and T2MR+ by t -test

DISCUSSION

- T2MR demonstrated excellent sensitivity (86%) in a 'real world' setting with increased T2MR sensitivity leading to the majority (23 of 28) of discordant results
- A significant reduction in TTT was associated with T2MR use
- There was no impact on mortality despite earlier therapy for patients with T2MR+ however these patients were sicker as evidenced by higher APACHE II scores suggesting biased testing
- These data strongly endorse the need for a large, prospective, multicenter study exploring the use of T2MR vs. standard of care

	TOTAL (N)	APACHE II SCORES	MORTALITY	TTT (DAYS)	<i>C. albicans</i> * (%)
BC+	112	13.6	0.36	1.6	42
BC+ (w/o T2MR)	99	13.2	0.33	1.8	42
BC+/T2MR-	5	20.6	0.6	0.4	40
BC+/T2MR+	8	14.3	0.5	0.13	50
BC-/T2MR+	23	16.6	0.43	0.1	65
T2MR+ (w/o BC)	4	20	0.5	0.1	50
T2MR+	35	16.4	0.46	0.1	60

* T2MR does not discern between *Candida albicans* and *C. tropicalis*

TABLE 2: Groups stratified based on both BC and T2MR results