



Scoring Systems and Mortality in Patients with Candidemia

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AIM

- For reasons such as the increasing numbers of patients requiring total parenteral nutrition and use of broad spectrum antibiotics and the prolongation of life expectancy in patients with malignities, candidemia are becoming an increasing problem.
- Candida spp. being observed in 50% of blood cultures, despite all the recent technological advances, shows that the problem is greater than expected.
- The purpose of this study was to assess mortality in patients with candidemia and to determine the predictive power of scoring systems in terms of mortality.

MATERIAL-METHOD

- This study was performed at the Karadeniz Technical University Faculty of Medicine.
- The hospital laboratory data and time to start of appropriate treatment, Charlson comorbidity index, SOFA and Pitt scores for 83 patients with Candida spp. in blood cultures between 1 January 2011 and 31 December 2013, were recorded retrospectively.
- The data obtained were transferred to SPSS 13 software for statistical analysis.

RESULTS

- Eighty-three patients were included in this study. Fifty-seven of the 83 patients died.
- No significant difference was determined between the dead and surviving patients in terms of age, gender, primary and underlying diseases or days of hospitalization.
- Sixteen of the patients who died were not started on antifungal therapy, while 13 were started on appropriate antifungal therapy after 3 days, and 5 of the surviving patients were started on appropriate antifungal therapy after 3 days (p=0.036).
- Charlson comorbidity index scores were 4.7±2.1 in the patients that died and 3.5±2.2 in the surviving patients (p=0.026).
- SOFA scores were 10.1±3.2 in the dead patients and 4.4±2.3 in surviving patients (p<0.0001).
- Pitt scores were 6.7±2.8 in the dead patients and 2.2±1.7 in the surviving patients (p<0.0001).
- SOFA score above 7 predicted mortality with 82.5% sensitivity and 96.2% specificity in candidemia patients, and a Pitt score above 3 predicted mortality with 89.5 % sensitivity and 76.9 % specificity (Table).

Table : The power of scoring systems to show mortality in patients with candidemia

	Cutt off	p	AUC	Sensitivity (%)	Specificity (%)	NPV (%)	PPV (%)
Charlson comorbidity index	>5	0.026	0.647	33.3	88.5	37.7	86.4
SOFA score	>7	<0.0001	0.937	82.5	96.2	71.4	97.9
Pitt score	>3	<0.0001	0.919	89.5	76.9	76.9	89.5

DISCUSSION

- Difficulties are still encountered in the ability to show candidemias, despite all the recent advances in culture facilities.
- Growth generally occurs after 3 days, and this leads to treatment delays and an increase in mortality rates.
- The use of scoring systems such as SOFA and Pitt in patients with risk factors for candidemia in such assessment and immediate initiation of antifungal therapy in patients with scores above cutoff values may be life-saving.