CLINICAL OUTCOMES BY TREATMENT TYPE AND FACTORS ASSOCIATED WITH MORTALITY AMONG PATIENTS WITH CANDIDEMIA AT A THAI UNIVERSITY HOSPITAL

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Abstract: Candidemia is a major cause of morbidity and mortality among hospitalized patients in Thailand. In this study we aimed to retrospectively investigate the clinical outcomes by treatment regimen and the factors associated with mortality among patients with candidemia at a hospital in Thailand in order to inform future treatment strategies. Inclusion criteria for study subjects were patients admitted to Phramongkutklao Hospital during January 2016-December 2019 who had laboratory confirmed candidemia. Exclusion criteria for subjects were: patients with candidemia who had a positive fungal blood culture prior to 48-hours hospitalization, who had incomplete medical records or who were referred to another hospital. The medical records of each subject were reviewed and the following recorded: demographic data, antifungal regimen, length of hospitalization, *Candida* species identified and treatment outcome. A total of 159 subjects were included in the study; 57.9% male. The median (interquartile range) age of subjects was 70 (58-81) years. Of the 159 subjects, 81.8% received antifungal therapy: amphotericin B in 67.9%, echinocandins in 5.7%, and fluconazole in 8.2%. The overall mortality rate among the 159 subjects was 72.3%, the mortality rate among the subjects with no antifungals was 100%, and the mortality rate among those treated with antifungals was 54.1%. The mortality rates among those treated with amphotericin B, echinocandins, and fluconazole were 64.8%, 44.4%, and 92.3%, respectively. The factors significantly positively associated on multivariate analysis with an increase in mortality at 30 days hospitalization were: shock (odds ratio (OR): 6.29; p-value $\leq$0.001), endotracheal intubation and mechanical ventilation (OR: 4.11; p-value = 0.017) and disseminated intravascular coagulation (OR: 6.05; p-value = 0.038). The factors significantly negatively associated with increased mortality at 30 days hospitalization were: the use of amphotericin B (OR: 0.34; p-value = 0.035) and the use of echinocandins (OR: 0.03;

p-value = 0.002). In our study, there was a high mortality rate even when treated, especially among those with shock, those who were intubated and those who had disseminated intravascular coagulation. Our results show that early treatment with either amphotericin B or echinocandins, but not fluconazole, were associated with improved mortality. Further studies are needed to determine if application of these factors in the treatment of these patients can improve mortality at the study institution.

Keywords: candidemia, mortality, amphotericin B, echinocandins

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