

## External Validation of Risk Prediction Score for Candidemia in Critically Ill Patients: A Retrospective Observational Study

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**Abstract :** Purpose: Candidemia was associated with high mortality in the critically ill patients. Early candidemia prediction is imperative for preemptive antifungal treatment. This study aimed to externally validate the candidemia risk prediction scores by Jameran et al. (2021) by identifying risk factors of acute kidney injury, renal replacement therapy, parenteral nutrition, and multifocal candida colonization. Methods: This single-center, retrospective observational study included all critically ill patients admitted to the intensive care unit (ICU) in a tertiary referral center from January 2018 to December 2023. The study evaluated the candidemia risk prediction score performance by analysing the occurrence of candidemia within the study period. Patients' demographic characteristics, comorbidities, SOFA scores, and ICU outcomes were analyzed. Patients who were diagnosed with candidemia prior to ICU admission were excluded. Results: A total of 500 patients were analyzed with 2 dropouts due to incomplete data. Validation analysis showed that the candidemia risk prediction score has a sensitivity of 75.00% (95% CI: 59.66-86.81), specificity of 65.35% (95% CI: 60.78-69.72), positive predictive value of 17.28, and negative predictive value of 96.44. The incidence of candidemia was 8.86%, with no significant differences in demographics or comorbidities except for higher SOFA scoring in the candidemia group. The candidemia group showed significantly longer ICU, hospital LOS, and higher ICU in-hospital mortality. Conclusion: This study concluded the candidemia risk prediction score by Jameran et al. (2021) had good sensitivity and a high negative prediction value. Thus, the risk prediction score was validated for candidemia prediction in critically ill patients.

**Keywords :** Candidemia, intensive care, acute kidney injury, clinical prediction rule, incidence

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