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Title: Risk Factors for Endogenous Endophthalmitis (EE) in Hospitalized Patients with Candida Fungemia

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Background/Purpose: Endogenous endophthalmitis (EE) is an uncommon, but devastating, ocular complication of Candidemia. Given the debilitating effects of this infection, the Infectious Diseases Society of America recommends that patients with Candidemia undergo a dilated eye examination to evaluate ocular involvement. The purpose of this study is to utilize the 2002-2014 National Inpatient Sample (NIS) Database to identify risk factors for EE in inpatients with Candidemia.

Methods: In this retrospective observational study, the NIS Database (2002-2014) was used to identify cases of Candidemia, EE, and co-morbidities. Chi square testing and regression analysis were performed using IBM SPSS 23 and R package version 3.4.3, respectively.

Results: We identified 98,783 inpatient cases of Candidemia; 529 (0.5%) cases had concurrent EE. Men comprised 48.0% of patients who did not develop EE and 45.1% of those who did ($p = 0.186$). The average age of fungemia patients with EE was 54.6 years and without EE was 58.2 years ($p < 0.001$). Hispanics (OR = 1.58), Asian/Pacific Islanders (OR = 3.51), and Native Americans (OR = 5.22) with Candidemia were at an increased risk of developing EE compared to Whites. Candida endocarditis (OR = 1.84), cirrhosis (OR = 1.93), diabetes with chronic complications (OR = 1.96), IV drug use (OR = 3.12), radiation therapy (OR = 5.28), and solid organ transplantation (OR = 2.48) increased the risk of EE. The mortality of inpatients with Candidemia was significantly lower in the EE group (2.8% vs 15.6%; $p < 0.001$).

Conclusion: Systemic comorbidities that increased the risk of EE in Candidemia were endocarditis, cirrhosis, diabetes with chronic complications, IV drug use, radiation therapy, and solid organ transplantation. Racial disparity was observed with Hispanics, Asian/Pacific Islanders, and Native Americans at a higher risk than Whites of being diagnosed with EE in the setting of Candida fungemia.