

localized pulmonary or disseminated disease. Urine antigen sensitivity ranged from 78% (overall) to 90% (disseminated disease). This appears consistent with what has been reported in other studies, but is lower than the overall reported sensitivity.

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#### 175. Epidemiology and Prognostic Factors of Non-albicans *Candida* species

##### Candidemia: A Multicenter Study

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**Background.** The incidence of *Non-albicans Candida* (NAC) fungemia has increased over the past decades with high mortality rates. However, the epidemiology and prognostic factors have seldom been investigated between species of NAC.

**Methods.** Patients with NAC fungemia between 2011 and 2014 from five tertiary hospitals in Taiwan were enrolled. The epidemiology data and factors associated with mortality including antifungal agents were collected by a standardized case-record form. A multivariate regression model was applied to analysis the factors associated with mortality.

**Results.** In total, 611 non-duplicated patients were enrolled. *Candida tropicalis* ( $n = 245$ , 42.3%) was most common followed by *Candida glabrata* ( $n = 213$ , 34.9%), *Candida parapsilosis* ( $n = 106$ , 17.3%) and others ( $n = 47$ , 7.7%). The overall 30-day mortality of all NAC candidemia was 47.7%. *C. tropicalis* infection had higher 30-day mortality (54.6%) than *C. glabrata* (42.8%) and *C. parapsilosis* (36.8%) ( $P < 0.05$ ). In general, Charlson Comorbidity Index (CCI), liver cirrhosis, double lumen use, and recent steroid exposure predicted a poor prognosis. Instead, central line infection was a protective factor (OR 0.42; 95% CI 0.24–0.71;  $P = 0.001$ ) because removal of central line was a most effective method for infection source control. In individual species of NAC, patients with *C. parapsilosis* infection took advantage from favorable host factors including younger age, lower CCI, fewer steroid exposure and more from central line infection than other two species. On the other hand, though the host factors were similar between *C. glabrata* and *C. tropicalis* infection, patients with *C. glabrata* infection took benefit from more echinocandin or high dose fluconazole ( $\geq 10$  mg/kg/day) use, which was associated lower mortality than those with usual dose fluconazole (6–10 mg/kg/day). However, the echinocandin or high dose fluconazole did not improved outcome of *C. tropicalis* infection.

**Conclusion.** The epidemiology and prognostic factors were different among NAC species. Risk assessment and therapeutic strategy should be individualized according to species when facing the rising threat of NAC infection.

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#### 176. Ocular Candidiasis in Patients with Candidemia at a Large Tertiary Care Center

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**Background.** Bloodstream infections (BSI) caused by *Candida* sp. have a high mortality rate and have been increasing in recent years. Ocular candidiasis (OC) is one systemic manifestation of *Candida* infection; either chorioretinitis or endophthalmitis, and may lead to vision loss. Therefore, IDSA recommends an ophthalmology exam for all patients with *Candida* BSI. However, reported incidence of OC varies from 1 to 25%, questioning routine eye exams in these patients. The purpose of this study was to evaluate the number of patients who undergo ophthalmological exams and those diagnosed with OC at Ochsner Medical Center, New Orleans (OMC-NO).

**Methods.** One hundred and forty-four patients were identified from January 2013 to December 2015 with at least one positive blood culture for *Candida* sp. (only *albicans*, *glabrata*, and *parapsilosis* were included). Records were reviewed through the EPIC system.

**Results.** Of the 144 patients, 65 were females and 79 males; average age 58 years old. Seventy-six (52.8%) had an ophthalmological exam at Ochsner; excluding one patient who refused an exam, one patient who was excessively combative, and one patient in whom exam was deferred due to medical condition. Three patients (3.9%) showed *Candida* chorioretinitis; none endophthalmitis.

**Conclusion.** OC can have devastating consequences if left untreated and early diagnosis is imperative. Our analysis reveals that OC is present in 3.9% of ophthalmology exams, but this may be biased towards patients who are cooperative and can

tolerate a dilated eye exam. Critical patients with multiple co-morbidities may be at higher risk for OC. A weakness of our study is that it is limited to ophthalmology records at Ochsner, and there may be records at outside facilities. Further data is required to make recommendations in patients with *Candida* BSI.

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#### 177. The Risk Factors and the Characteristics of Fungal Endophthalmitis

##### Following *Candida* Blood Stream Infection, a Case-Control Study

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**Background.** Fungal endophthalmitis is one of the severe complications following *Candida* blood stream infection (Candidemia).

**Methods.** To analyze the risk factors of Candidemia-related fungal endophthalmitis, total 50 Candidemia cases underwent ophthalmology examination between April 2011 and March 2016 were retrospectively collected from the medical records. Ten Candidemia with endophthalmitis cases were compared with 40 Candidemia cases without endophthalmitis were reviewed to analyze the risk factors and characteristics; patients' age, gender, causative *Candida* species, the presence of shock, the highest sequential organ failure assessment (SOFA) score and the predisposing factors including diabetes, steroid use, hematological malignancy, cancer, central venous catheter (CVC) placement and neutropenia.

**Results.** By bivariate analysis, candidemia caused by *C. albicans* (40% vs. 6.7%,  $P = 0.009$ ), the presence of shock (36.4% vs. 15.4%,  $P = 0.197$ ), CVC placement (25.7% vs. 0%,  $P = 0.092$ ), and neutropenia (40% vs. 15%,  $P = 0.097$ ) were found higher endophthalmitis group. By logistic regression analysis, *C. albicans* candidemia was only found to be a significant risk factor (adjusted odds ratio 9.41 [95% CI, 1.42–64.76]).

**Conclusion.** *C. albicans* is most responsible causative agent for candidemia-related endophthalmitis. Candidemia cases with the presence of shock, CVC placement, and neutropenia should be closely monitored to early detect *Candidemia*-related endophthalmitis.

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#### 178. Antifungal Resistance and Predictors of Response in Patients with Hematologic Malignancy

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**Background.** Invasive aspergillosis (IA) causes significant morbidity and mortality in patients with hematologic malignancies (HM). Azole resistance has emerged as a therapeutic challenge in managing IA. The aim of this study was to investigate *Aspergillus* susceptibility to antifungals over the past decade among HM patients, and correlate susceptibility to clinical outcomes.

**Methods.** All *Aspergillus* isolates banked from 2002 to 2014 isolated from HM patients with probable/proven IA were tested for antifungal susceptibility. Patients with hematopoietic cell transplant, duplicate and non-viable isolates were excluded. Data were collected on demographics and clinical factors that could affect the treatment response, antifungal susceptibility (MICs/MECs), and treatment response at 14, 30, and 90 days.

**Results.** Forty patients were identified. MICs for amphotericin B slightly increased over the past decade ( $R = 0.32$ ,  $P = 0.09$ ), but were stable for voriconazole ( $R = -0.08$ ,  $P = 0.61$ ). The MIC<sub>50</sub> during the first 3 years (2002–2004) and last 3 years (2012–2014) for amphotericin B were 0.5 and 1 mg/l, and for voriconazole 0.5 and 1. Mean age 56 years, 48% male, 82% had active HM and 45% had received chemotherapy within 14 days of IA. 50% were neutropenic and 30% had circulating blasts. Forty percent were on antifungal prophylaxis. Seventy-five percent of isolates were *A. fumigatus*. Fourteen responded to treatment (TR) and 26 were non-responders (NTR), and they did not differ in baseline characteristics. However, neutropenia (14% TR vs. 58% NTR,  $P < 0.017$ ) and circulating blasts (0% TR vs. 35% NTR,  $P < 0.02$ ) at 14 days differed. The MIC<sub>50</sub> for voriconazole was 0.5 mg/l in both groups, and for amphotericin B was 0.25 in TR vs. 1 mg/l in NTR. Fourteen-day response correlated with 90-day response ( $R = 0.74$ ,  $P < 0.01$ ) which validated the use of 14-day response for clinical outcome. All responders on amphotericin B at 14, 30, and 90 days had isolates with MIC  $< 1$ , whereas no apparent MIC-response correlation was found for voriconazole.

**Conclusion.** Although not statistically significant, a trend of increasing *Aspergillus* amphotericin B MICs was observed over the past decade. Neutropenia and persistent disease correlated with treatment failure. Clinical response was not affected by the azole or polyene MICs.

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