179. *Candida parapsilosis* Candidemia Resistance Patterns and Treatment Outcomes: An Opportunity for Antifungal Stewardship

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Background. *Candida parapsilosis* has emerged as an important fungal pathogen with mortality rates up to 30%. Recent studies show no difference in treatment outcomes for patients treated both empirically and definitively with either echinocandins or fluconazole. However, the impact of antifungal susceptibility testing and opportunities for antifungal stewardship are less clear in this patient population. The purpose of this study was to assess antifungal susceptibility rates, treatment patterns, and outcomes among patients with *C. parapsilosis* candidemia.

Methods. This was a single-center, retrospective cohort review of adult patients with a positive blood culture for *C. parapsilosis* hospitalized at Baylor St. Luke's Medical Center, between 2006 and 2016. Patients with mixed or breakthrough candidemia were excluded as well as patients who expired within 3 days of candidemia onset.

Results. Eighty patients with *C. parapsilosis* candidemia were identified of which 48 met inclusion criteria. Nine patients had infections caused by fluconazole non-susceptible isolates (19%). The most common empiric treatment choice was an echinocandin (33/48, 69%), followed by fluconazole (9/48, 19%), and combination therapy (6/48, 13%). Of the 39 patients with fluconazole susceptible isolates, only 17 were treated with fluconazole definitively (44%). Among patients who received empiric echinocandin vs. fluconazole therapy, there was no difference in 14-day mortality (9% vs. 11%, $P = 1.00$) or in-hospital mortality (12% vs. 11%, $P = 1.00$). Empiric combination therapy was the only independent risk factor for treatment failure (OR, 13.8; 95% CI, 1.4–138.3; $P = 0.03$).

Conclusion. Treatment outcomes for patients receiving echinocandins were similar for those receiving fluconazole. At our institution, the increased incidence of fluconazole non-susceptible isolates warrants the use of echinocandins empirically. Patients were more likely to remain on echinocandin therapy even when fluconazole susceptible isolates were identified. This study reinforces the guideline suggestion that neither echinocandins nor fluconazole treatment leads to superior outcomes, but also identifies a cohort of patients in need of antifungal stewardship.

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180. Phaeohyphomycosis: A 10-Year Review (2006–2016)

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Background. Phaeohyphomycosis is a rare infection caused by dematiaceous (pigmented) fungi, frequently reported in tropical and sub-tropical countries. Data regarding this infection is sparse and comprises mainly of case reports. This study was carried out to review epidemiology, causative spectrum, clinical features, and treatment outcomes in patients with Phaeohyphomycosis.

Methods. We reviewed 20 cases of culture proven Phaeohyphomycosis over a 10-year period at Christian Medical College, Vellore, South India.

Results. In our cohort, 16 of the 20 patients were male (80%) with an average age of 42 (range 17–66 years). Most of them (35%) were from Tamil Nadu, India and some from Bhutan and Nepal. Eighty-five percent presented with cutaneous lesions, 5% with involvement of the paranasal sinuses, and 5% each had organ involvement in brain and liver. Possible predisposing factors included type II diabetes mellitus (35%), renal transplantation (30%), long-term use of steroids (15%), and human immunodeficiency virus (5%). For all the patients, the direct microscopy and the culture positivity was 100%. The common species isolated were *Cladophialophora bantiana*, *Cladosporium cladosporoides*, *Cladosporium sphaerospermum*, *Phialophora oxyspora*, and *Exophiala spinifera*. Most patients (60%) received monotherapy with itraconazole. Five patients were cured, four had recurrence, one patient died (due to leukemia), and 10 were lost to follow-up.

Conclusion. Phaeohyphomycosis, though an uncommon infection, causes life-threatening disease in both the immunocompetent and immunocompromised hosts. To our knowledge, this is the largest single-centre retrospective study on Phaeohyphomycosis. Though our follow-up was sub-optimal and possible in only 50%, it was noteworthy that disease recurrence was common. Better understanding of pathogenesis and newer antifungals are needed for optimal cure of this disease.

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181. Clinical Outcomes of the Oral Suspension vs Delayed-Release Tablet Formulations of Posaconazole for Prophylaxis of Invasive Fungal Infections

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Background. Posaconazole is effective prophylaxis for invasive fungal infections (IFIs). We compared incidence of breakthrough IFI (bIFI) and early posaconazole discontinuation between patients receiving delayed-release tablet and oral suspension formulations.

Methods. This was a retrospective cohort study of patients receiving posaconazole at Oregon Health & Science University Hospital between 1/1/2010 and 6/30/2016. Oral suspension was the preferred formulation until 2/2014; afterwards the tablet was preferred. We included all courses of primary prophylaxis for each patient during the study period. Data were extracted from an electronic health record repository and via chart review. Three independent reviewers identified bIFI using European Organization for Research and Treatment of Cancer criteria. We assessed rationale for early discontinuation of posaconazole for patients that were still indicated for antifungal prophylaxis based on National Comprehensive Cancer Network (NCCN) criteria.

Results. 547 patients received 859 courses of posaconazole (53% oral suspension and 48% tablet). Prophylaxis was indicated according to NCCN criteria in 91% of courses. The primary indications for prophylaxis were acute myelogenous leukemia (68%), graft-vs-host disease (18%), and myelodysplastic syndrome (3%). There were no significant differences in demographics or indication between patients receiving the different formulations. The overall incidence rate of bIFI was 4.15/10,000 posaconazole-days (16 total bIFI events). Incidence of bIFI was not significantly different between patients receiving the different formulations ($P = 0.92$). Posaconazole was discontinued early in 147 (17%) courses; frequency of discontinuation was not significantly different between the tablet (20%) and oral suspension (15%) formulations ($P = 0.10$) The primary reasons for early discontinuation were elevated liver function tests or QT prolongation (25%), inability to take an oral formulation (17%), and drug cost (17%).

Conclusion. Among patients receiving posaconazole prophylaxis, incidence of bIFI was low and not significantly different between those receiving the tablet vs oral suspension formulations.

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182. Clinical Characteristics and Outcomes in Hospitalized Patients with Proven and Probable Coccidioidomycosis at the National Institute of Respiratory Diseases in Mexico City

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Background. *Coccidioides* spp. *a*n endemic dimorphic fungi is present in the north and south of Mexico. The Ministry of Health report in Mexico between 1988 and 1994 0.5 to 1.3 cases per 100,000 habitants. The clinical picture ranges from asymptomatic to disseminated disease. They should be classified according to the EORTC/ MSG criteria in proven and probable disease, in Mexico there is no study about clinical characteristics and outcomes in hospitalized patients according to this classification.

Objective: Evaluate the clinical characteristics and outcomes in hospitalized patients with proven and probable coccidioidomycosis according to EORTC/MSG criteria.

Methods. The National Institute of Respiratory Diseases in Mexico City is the national referral center for complicated pulmonary infectious diseases. This retrospective cohort from 2010 to 2016 included proven and probable Coccidioidomycosis hospitalized patients classified according to EORTC/MSG 2008 criteria. We collected data about clinical characteristics on admission and outcomes.

Results. Fifty-seven patients were evaluated, 26 proven and 31 probable, mean age was 43 years. The proven group was associated with DM2 OR 2.8 (IC95% 1.1–7, $P = 0.014$) and hemoptysis OR 3.2 (IC95% 1.1–9, $P = 0.013$), the probable group with dyspnea OR 3.5 (IC 95% 1.08–11, $P = 0.024$), high respiratory rate 27.2 ± 13 vs. 22 ± 3.3 ($P = 0.05$), and low O2 saturation 83.97% ± 11.1 vs. 91.8% ± 4.31 ($P < 0.001$). In the proven group, multiple cavities in CT scan were more frequent. The probable had association with severe ARDS (P 0.011), use of invasive mechanical ventilation (P 0.025), and increase in mortality 14% vs. 1.8% OR 1.2 (IC95% 1.03–1.6 $P = 0.025$) with lower survival in Kaplan–Meier ($P < 0.02$). In the proven group, there was more disseminated disease (P <0.001), HIV was associated with lower survival (P <0.001) and they received more days of antifungal treatment 109.5 ± 127 vs. 59.8 ± 93 days. Amphotericin B was the most prescribed in both groups.