161. Safety and Efficacy of Anidulafungin in the Treatment of Invasive Candidiasis in Children

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Background. Treatment with an echinocandin is recommended as first-line therapy of patients with invasive candidiasis including candidemia. Little is known about the efficacy and safety of anidulafungin (ANID) for the management of ICC in children.

Methods. Subjects aged 1 months to 17 years with ICC were enrolled into a prospective, open-label, non-comparative, multi-center, global study (NC00768267) to receive ANID as monotherapy. An interim analysis was completed in children 2–17 years. Subjects were to receive ANID for at least 10 days up to 35 days. A central venous catheter suspected as a site of infection was to be removed. A switch to oral fluconazole could be made after day 10. Treatment was required for at least 14 days after two negative cultures separated by 24 hours. Efficacy, based on a determination of global response (combination of clinical and microbiological response), was assessed at end of IV treatment (EOIVT), end of treatment (EOT), 2- and 6-week follow-up. Safety was assessed through 6-week follow-up.

Results. In total, 45 subjects (18, 2-5 years, 5-17 years) received at least 1 dose of ANID (mean 11 days; range 1–35 days) and were assessed for safety. Forty-seven subjects had microbiologically confirmed ICC and were evaluated for efficacy. The most common baseline pathogens were C. albicans (38%) and C. parapsilosis (26%). Forty-four (93.6%) subjects had candidemia only. Global response success rates at EOIVT and EOT were 72.3 and 74.5%, respectively. All subjects reported 26.9% had exposure to mold-active agents within 30d of dx. Most patients (34; 85%) to be secondary to direct extension or hematogenous spread in 9 (23%) and 31 (77%) patients, respectively. In the latter group, 28/31 (90%) had fungal pneumonia. Of the 27 and 9 patients who had Aspergillus galactomannan antigen tested from serum and CSF, respectively, 18 had positivity in serum (66%) and 3 in CSF (33%). Most patients (30; 75%) had exposure to mold-active agents within 30d of dx. Most patients (44; 89%) received ANID and were treated with a combination therapeutic regimen (23; 83%). Most CNS lesions presented as ring-penetrating abscesses radiographically (26; 65%). Absence of giant cells and granulomas in the pathologic examination of the brain lesions were associated with increased mortality (0% vs. 70%; P = 0.01 and 0% vs. 60% in those patients treated, P = 0.03, respectively). In multivariate analysis, co-infection at the time of dx was associated with increased mortality (OR: 16.5, 95% CI: 1.4–198.3, P = 0.03) while steroid tapering was associated with decreased mortality (OR: 0.06, 95% CI: 0.01–0.53, P = 0.01). There was a trend towards protective role of surgical drainage (OR= 0.18, 95% CI: 0.03–1.1, P = 0.07).

Conclusion. CNS ICCs occur in patients with active HC who are often pre-exposed to antifungals. Immune response in pathology, steroid tapering and possibly surgical drainage are associated with improved outcomes.

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163. Risk Factors for Candidemia as Compared with Patients with Negative Blood Cultures Placed on Empiric Micafungin

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Background. Numerous risk factors have been linked to invasive candidiasis; however, many are not specific to candidemia. This study aimed to trigger empiric antifungal therapy in a large number of patients. Identification of more precise predictors could promote judicious use of empiric echinocandins. Ultimately, this could decrease antifungal development, resistance, and associated costs.

Methods. This was a retrospective review of patients admitted to Baylor University Medical Center from 10/11/4 to 10/25/16. Patients with positive blood cultures for Candida spp. were compared with a randomly selected cohort of patients on empiric micafungin for 3 or more days and with blood cultures negative for Candida spp. This study excluded patients on prophylactic antifungals and patients with positive abscents cultures but negative blood cultures for Candida spp. Data was analyzed using the χ² test, t-test comparing means, and logistic regression as applicable.

Results. There were 127 patients with candidemia and 134 patients without candidemia on empiric micafungin. Factors associated with candidemia included positive 1,3-b-D-glucan assay (86.6%; 95.5%, P < 0.001), total parenteral nutrition (TPN) (26.0% vs. 19.9%, P = 0.004), and multifocal Candida colonization (35.3% vs. 4.5%, P < 0.001). Patients without candidemia on empiric micafungin were more likely to receive antibiotic therapy in the previous 10 days (55.9% vs. 79.9%, P < 0.001) and more likely to be taking immunosuppressive medications (11.0% vs. 26.6%, P < 0.001). There was no difference in mean length of stay (25.5 days vs. 27.3 days, P = 0.631) or 30-day all-cause mortality (32.3% vs. 23.9%, P = 0.131) between patients with candidemia and patients on empiric micafungin, respectively.

Conclusion. A negative 1,3-b-D-glucan assay in patients without multifocal Candida colonization or receiving TPN was inversely correlated with invasive candidiasis, as defined by candidemia. Therefore, some of the absence factors may be useful to deescalate empiric micafungin therapy. Risk factors for candidemia identified in this study were robustly consistent with previously published literature. These findings highlight an opportunity to improve empiric micafungin prescribing patterns at our institution.

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