SUCCESSFUL TREATMENT OF CANDIDEMIA WITH CASPOFUNGIN AND LIPOSOMAL AMPHOTERICIN B AFTER FAILURE OF MONOTHERAPY

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Introduction:Recent data show caspofungin is equivalent to amphotericin B (AmB) in the treatment of invasive candidiasis. In vitro data indicate that echinocandins may have an advantage over AmB in the treatment of fungal infections involving biofilm. This has not been shown clinically. We present two cases, one pediatric and one adult, of invasive candidiasis, which failed treatment with AmB and that responded to the addition of caspofungin.

Case 1: A previously healthy three-year-old female was admitted for intussusception and underwent bowel resection with anastomosis, complicated by perforation. Her ICU course included ventilator-associated pneumonia, and poor weight gain. She received numerous antibiotics and total parenteral nutrition (TPN). She subsequently developed *C. albicans* line infection, fungemia, and endocarditis. She was initially treated with fluconazole for 7 days and switched to AmB due to a lack of response. On day 14 of therapy, 5-flucytosine (5-FC) was added due to persistent fungemia. On day 36, AmB was changed to liposomal AmB. Despite this combination, fungemia persisted. On day 41 of therapy, caspofungin was added. Within 48 hours, fungemia was cleared. Fevers and leukocytosis resolved within two weeks.

Case 2: A 44-year-old woman with a history of multiple medical problems was admitted for a diverticular perforation. The hospital course was complicated by necrotizing fasciitis, enterocutaneous fistula, gastrojejunostomy leak, and a right subclavian venous thrombosis associated with IV catheters. She subsequently developed *C. glabrata* fungemia. AmB was initiated and catheters were removed. She was diagnosed with septic thrombophlebitis. On day 15 of therapy, liposomal AmB was substituted due to persistent fungemia. On day 24 she remained fungemic, and caspofungin was added. Repeat blood cultures 4 days later were sterile.

Conclusion: These cases demonstrated the rapid improvement in the clinical outcome after the addition of caspofungin for the treatment of candidemia. While both cases failed therapy with liposomal AmB +/- 5FC, success was achieved rapidly with the addition of caspofungin. Susceptibility data suggested that treatment could have been effective without adding caspofungin. The cases raise three questions. First, does caspofungin have an additive or synergistic effect in combination with AmB in the treatment of candidemia? Does *Candida* biofilm play a role in treatment failure? If so, is the addition of caspofungin necessary for the eradication of candidemia in the presence of biofilm? Further studies are needed to answer these questions.