



Title	Plasma Concentration of Antifungal Agent Micafungin for Pediatric Living Donor Liver Transplantation
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Plasma concentrations of the antifungal agent micafungin in the setting of pediatric living-donor liver transplantation

Abstract

Introduction: Pediatric living-donor liver transplantation (LDLT) candidates often receive long-term antibiotic treatment. Micafungin has been used as an antifungal agent after LDLT, but the adequate dose after pediatric LDLT was unknown. Here we report micafungin blood concentrations after pediatric LDLT and discuss its safety and adequate dosing.

Methods: Pediatric patients with data on micafungin concentrations after LDLT were identified. Those with surgical complications were excluded. All patients received standard tacrolimus-based immunosuppression. A micafungin dose of 1 mg/kg was administered once daily for 10 days starting on postoperative day (POD) 1. The trough and peak micafungin blood concentrations were evaluated on PODs 1, 4, 7, and 10. Beta D glucan levels and liver function tests were assessed to determine micafungin effectiveness and safety.

Results: Ten patients were enrolled, with a median age of 1.2 years. The median graft vs. body weight ratio was 2.7%. The primary diseases were biliary atresia (n=7), Alagille syndrome (n=2), and progressive familial intrahepatic cholestasis type 2 (n=1). Mean peak micafungin levels were 4.47, 6.27, 5.47, and 5.47 µg/ml on PODs 1, 4, 7, and 10,

respectively. Mean trough levels were 2.03, 1.88, and 2.66 $\mu\text{g}/\text{ml}$ on PODs 4, 7, and 10, respectively. The micafungin half-lives were 13.7, 14.7, and 14.0 hours on PODs 4, 7, and 10, respectively. Beta D glucan levels were 4.4 pg/ml and 3.7 pg/ml before and after transplantation, respectively, indicating no significant difference ($p=0.3$). No clinical fungal infections were observed.

Conclusions: Micafungin administration is safe and effective after pediatric LDLT.