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P0309 Efficacy of anidulafungin (AFG) in the treatment of Candida auris infection using an immunocompromised murine model of disseminated candidiasis

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Background: The first case of an invasive infection caused by *C. auris* was reported in July of 2016. Multiple cases have since been reported with high mortality rates due to the multidrug-resistant nature of *C. auris*. Clinical isolates of *C. auris* show elevated minimum inhibitory concentrations (MICs) to all three major classes of currently available antifungals, however, increased susceptibility to the echinocandins has been reported. In this study, we evaluated the efficacy of the echinocandin anidulafungin (AFG) against *C. auris* utilizing a murine model of disseminated candidiasis.

Materials/methods: Female 6-8 week old CD-1 mice were immunosuppressed 3 days prior to infection and 1 day post-infection. Mice were inoculated with $3x10^7$ *C. auris* blastospores via the tail vein. Mice were randomized into 5 groups (n=5 for colony forming units (CFU) and n=10 for survival): AFG 15mg/kg qd, AFG 15mg/kg BID, AFG 20mg/kg qd, AFG 20mg/kg BID, and vehicle control. Treatments were administered 2 hours post-infection and continued for 7 days. Mice were monitored daily for survival. CFU groups were sacrificed on day 8 of the study. Kidneys were removed from each mouse, homogenized, plated on potato dextrose agar, and incubated at 35°C for 2 days to determine CFU.

Results: All AFG treated mice demonstrated a significant reduction in the average $\log_{10}$ CFU in the kidneys compared to vehicle treated mice (Table 1). Additionally, percent survival of mice at the end of the study in AFG 15mg/kg qd, AFG 15mg/kg BID, AFG 20mg/kg qd, AFG 20mg/kg BID, and vehicle treated groups was 100, 100, 100, 90, and 30%, respectively.

Conclusions: Our findings show that AFG possesses potent antifungal activity against *C. auris* infection. Additionally, treatment with AFG resulted in significantly higher overall percent survival. Further investigation of this drug in the treatment of disseminated *C. auris* infection is warranted.

Table 1. Efficacy of AFG in reducing kidney fungal burden

Treatment	**Mean CFU±SD**	***P*-value Relative to Vehicle**
Vehicle	7.23 ± 0.36	-
AFG 15mg/kg qd	3.58 ± 0.77	<0.0001[a]
AFG 15mg/kg BID	3.62 ± 0.40	<0.0001[a]
AFG 20mg/kg qd	3.37 ± 1.27	<0.0001[a]
AFG 20mg/kg BID	3.09 ± 0.45	<0.0001[a]

[a] Statistically significant