Efficacy of CD101, a Novel Echinocandin, in Mouse Models of Aspergillosis and Azole-Resistant Disseminated Candidiasis

V. Ong,¹ K. Bartizal,¹ L. Miesfeld²
¹Cidara Therapeutics Inc., San Diego, CA; ²Eurofins Panlabs, Taiwan

AMENDED ABSTRACT

Background CD101 is a novel echinocandin with long-acting pharmacokinetics and exceptional stability in development for prevention and treatment of serious fungal infections. The in vivo efficacy of CD101 was evaluated using neutropenic mouse models of azole-resistant candidiasis and aspergillosis.

Methods An azole-resistant strain of Candida albicans (R357, resistant to fluconazole [Flu], voriconazole, and posaconazole) but susceptible to amphotericin B [AmB] and echinocandins isolated from human blood was used for the mouse candidiasis model. A test strain of Aspergillus fumigatus (ATCC 13073) was used for the mouse aspergillosis model. Mice were infected with CD101 by intraperitoneal administration (IP). After 72 hours postinfection, mice were euthanized, and CFU were measured. In the mouse candidiasis model, groups of 10 mice each received one dose of CD101 3 mg/kg IP or CD101 (2 mg/kg and 30 mg/kg IP) or AmB 3 mg/kg IP and CD101 (1 mg/kg and 30 mg/kg IP) for 7 days term dosing intervals and the neutropenic mouse model of azole-resistant candidiasis and aspergillosis using disseminated mouse infection models, respectively.

RESULTS

• Among the articles tested, CD101 (10 mg/kg and 30 mg/kg) was the only treatment to demonstrate a reduction (fungicidal) in fungal burden at 72 h compared with pretreatment counts (initial 2 h counts)

• CD101 administered IP and IV was efficacious in neutropenic mouse models of disseminated candidiasis and aspergillosis

• Significantly greater fungal burden reduction and rates of survival than vehicle

• Outcomes comparable to those of AmB at the same doses used in each respective model

• CD101 efficacy persisted 72 h after infection, consistent with its long-acting pharmacokinetics

• These data demonstrate the potential of CD101 in humans and support its continued development for treatment and prevention of serious infections caused by Candida, including azole-resistant strains, and Aspergillus spp.

CONCLUSIONS

REFERENCES


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