

The effectiveness of anidulafungin versus liposomal amphotericin B (LAmB) for treating experimental Candida parapsilosis catheter-related infection by an antifungal-lock technique was assessed” Basas et al (2016).

Abstract:

OBJECTIVES: The effectiveness of anidulafungin versus liposomal amphotericin B (LAmB) for treating experimental Candida parapsilosis catheter-related infection by an antifungal-lock technique was assessed.

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METHODS: Two clinical strains of *C. parapsilosis* (CP12 and CP54) were studied. In vitro studies were used to determine the biofilm MICs (MBIC50 and MBIC90) by XTT reduction assay and LIVE/DEAD biofilm viability for anidulafungin and LAmB on 96-well microtitre polystyrene plates and silicone discs. An intravenous catheter was implanted in New Zealand white rabbits. Infection was induced by locking the catheter for 48 h with the inoculum. The 48 h antifungal-lock treatment groups included control, 3.3 mg/mL anidulafungin and 5.5 mg/mL LAmB.

RESULTS: Anidulafungin showed better in vitro activity than LAmB against *C. parapsilosis* growing in biofilm on silicone discs. MBIC90 of LAmB: CP12, >1024 mg/L; CP54, >1024 mg/L. MBIC90 of anidulafungin: CP12, 1 mg/L; CP54, 1 mg/L ($P \leq 0.05$). Moreover, only anidulafungin (1 mg/L) showed >90% non-viable cells in the LIVE/DEAD biofilm viability assay on silicone discs. No differences were observed between the in vitro susceptibility of anidulafungin or LAmB when 96-well plates were used. Anidulafungin achieved significant reductions relative to LAmB in log₁₀ cfu recovered from the catheter tips for both strains ($P \leq 0.05$). Only anidulafungin achieved negative catheter tip cultures (CP12 63%, CP54 73%, $P \leq 0.05$).

CONCLUSIONS: Silicone discs may be a more reliable substrate for the study of in vitro

biofilm susceptibility of *C. parapsilosis*. Anidulafungin-lock therapy showed the highest activity for experimental catheter-related infection with *C. parapsilosis*.

Reference:

Basas, J., Morer, A., Ratia, C., Martín, M.T., Del Pozo, J.L., Gomis, X., Rojo-Molinero, E., Torrents, E., Almirante, B. and Gavaldà, J. (2016) Efficacy of anidulafungin in the treatment of experimental *Candida parapsilosis* catheter infection using an antifungal-lock technique. *The Journal of Antimicrobial Chemotherapy*. July 4th. .

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