Caspofungin

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Recurrent candidaemia and development of resistance to echinocandins in an elderly patient: case report

A 69-year-old man developed recurrent candidaemia due to echinocandin-resistant *Candida glabrata* after prolonged treatment with caspofungin.

The man developed candidaemia due to *C. glabrata* on 16 June 2009 (isolate CL7368). Treatment with fluconazole was ineffective, and on 26 June, he started receiving caspofungin, with a 70mg loading dose, followed by 50 mg/day [*route not stated*]. Caspofungin was continued for 30 days. On 13 July, he was admitted to an ICU with abdominal sepsis, and underwent surgery for superior mesenteric vein thrombosis. Cultures revealed gastric colonisation by *C. glabrata*. On 28 August, he presented with candidaemia, and *C. glabrata* was isolated from his blood and central venous catheter (CVC) tip (isolate CL7369). The minimum inhibitory concentration (MIC) for caspofungin was 0.5 µg/mL, and the isolate was considered echinocandin-susceptible. He received a further 3-week course of caspofungin [*dosage not stated*]. After 4 days of antifungal therapy, his fever resolved and his blood cultures were negative. However, on 21 October, he presented with sepsis and fever. Abdominal CT showed chronic ischaemia, and *C. glabrata* was isolated from his blood and CVC tip (isolate CL7370).

The man was admitted to an ICU, and started receiving anidulafungin. He underwent small bowel resection; however, his blood cultures remained positive for *C. glabrata* after 4 days of anidulafungin. MICs for caspofungin and anidulafungin were 1 µg/mL and 2 µg/mL, respectively. Anidulafungin was switched to liposomal amphotericin B, and his candidaemia resolved 17 days later. Further MIC testing confirmed that the isolates recovered after caspofungin treatment (CL7369 and CL7370) had lower susceptibility to anidulafungin and caspofungin than the originally isolated strain (CL7368). Genetic analysis showed that these two isolates contained a mutation in the *FKS2* gene that causes resistance to echinocandins.

Author comment: "*The strains from this study showed the same microsatellite profile for the three markers, indicating that these strains are genetically related and suggesting that resistance was acquired by mutation of the FKS2 gene in the first isolate.*"

Duran-Valle MT, et al. Recurrent episodes of candidemia due to Candida glabrata with a mutation in hot spot 1 of the FKS2 gene developed after prolonged therapy with caspofungin. Antimicrobial Agents and Chemotherapy 56: 3417-3419, No. 6, Jun 2012. Available from: URL: http://dx.doi.org/10.1128/AAC.06100-11 - Spain

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