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## Evaluation of direct antifungal susceptibility testing methods of *Candida* spp. from positive blood culture bottles

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**Statement of the Problem:** Blood culture is still the gold standard diagnostic method in spite of long resulting time and low sensitivity rate in candidemia. However, early diagnosis is crucial for management in time of candidemia, because a delay in treatment of hospitalized patients with candidemia is significantly related with increased mortality. We aimed to evaluate the direct applicability of antifungal susceptibility tests from positive blood culture bottle for six antifungals, to save at least 24 hours.

**Methodology:** Blood culture bottles were inoculated with 62 *Candida* isolates. After the bottles signaled as positive, epsilometer test (Etest) and broth micro-dilution (BMD) methods for six anti-fungals (fluconazole, voriconazole, posaconazole, caspofungin, anidulafungin and amphotericin B), disk diffusion method for two anti-fungals (fluconazole and voriconazole) were performed by both direct methods from positive bottles and standardized methods following overnight agar medium subculture.

**Findings:** The essential agreements between direct and standard Etest methods were 87.1% for caspofungin and >90% for other antifungals, but the agreement of them with reference BMD was relatively low (67-79% for direct, 50-85% for standardized Etest methods). The essential agreements of direct BMD with standardized BMD were 93.5% for caspofungin and >98% for other antifungals. Correlation between direct and standardized disk diffusion methods was very high, negative correlations were observed between direct and standardized disk diffusion methods with reference BMD for fluconazole and voriconazole.

**Conclusion:** BMD is a reference method to detect antifungal susceptibility and direct application of BMD might provide reliable results at least 24 h early. Direct disk diffusion method may be a qualitative alternative to BMD. Direct antifungal susceptibility tests may be very useful to initiation of the appropriate treatment on time.

### Biography

Yasemin Oz has expertise in areas of medical microbiology and medical mycology. She is interested in human infections caused by fungi. Her studies focused on the detection, identification and antifungal susceptibility of medically important fungi. Currently, she works as the Head of the Mycology Laboratory in the Clinical Microbiology Department in a tertiary university hospital.

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