

Original Paper

Efficacy of ultraviolet radiation on drug susceptibility of *Candida* Spp. to itraconazole, fluconazole and amphotericin B

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Abstract

Background and Objective: Ultraviolet (UV) radiation is an important disinfectant. Fungal infections with resistant isolates in patients culminate in recurrence of disease even with worse condition. This study was done to evaluate the efficacy of ultraviolet radiation on drug susceptibility of *Candida* Spp. to itraconazole, fluconazole and amphotericin B.

Materials and Methods: This laboratory study was done on 12 *Candida* spp. isolated from patients according to NCCLS M27- A method. Samples were suspended with sterile saline and optical density was read by spectrophotometer at the wavelength of 530 nm. Serial dilutions (0.0313-16 µg/ml) and (0.0313-128 µg/ml) were supplied for itraconazole, amphotericin and fluconazole, respectively. MICs were determined after 48h incubation at 35°C. Following UV radiation for 1, 2, 5, 10, 60, 90 and 120 seconds MICs were determined, subsequently.

Results: The highest MIC pre UV radiation was (>128 µg/ml) for fluconazole. After UV radiation, MICs were steadily decreased for all mentioned drugs while after 10 sec, MICs of itraconazole and amphotericin B were >0.0313 µg/ml. Secondary MICs significantly decreased with respect to MICs obtained in pre UV radiation (P<0.05).

Conclusion: UV radiation reduces MICs of *Candida* spp. to itraconazole, fluconazole, amphotericin B.

Keywords: *Candida*, Ultraviolet radiation, Itraconazole, Fluconazole, Amphotericin B, Drug resistance

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