

Original Paper

Antifungal activity of commercial disinfectants: formaldehyde, glutaraldehyde, microten, alcohol 70 and savlon–alcohol on isolated saprophytic fungi from hospital environments

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Abstract

Background and Objective: Nosocomial infections are one of main causative agents of mortality among hospital patients. This study was done for the determination of efficacy of commercial disinfectants such as: formaldehyde, glutaraldehyde, microten, the alcohol 70 and savlon–alcohol on isolated saprophytic fungi from hospital environments.

Materials and Methods: This descriptive study was done on 33 isolated fungi from teaching hospitals of Tehran during 2009-10. The identified samples were randomly chosen. Stock fungal suspensions were supplied from each fungus with cells ranging $0.5-5 \times 10^4$ $\mu\text{g}/\text{cfu}$ in 1ml with spectrophotometer at the wavelength of 530 nm. For evaluation of antifungal activity of commercial disinfectants formaldehyde, glutaraldehyde, microten, alcohol 70 and savlon–alcohol disinfectants, 0.25cc stock solutions were mixed with 3.75 cc disinfectants solutions and the new diluted samples held at 25c for 15, 30 and 60 min. The culture medium was checked for growth of fungi until 8 weeks.

Results: Following specific period isolated fungi were including *Aspergillus* spp with 39.4%, *Penicillium* spp with 36.4%, *Fusarium* spp with 12.1%, *Rhizopus* with 6.1%, *Alternaria* and *Circinella* with 3 %. Formaldehyde 8% and glutaraldehyde 8% with activity against 63.6% and 39.3% were effective disinfectants at 15 min. Formaldehyde 8% with activity against 74.8% of fungi, was effective disinfectant at 30 min. Glutaraldehyde 8% and formaldehyde 8% with 100% prevention of growth were effective disinfectants at 60 min.

Conclusion: According to this study formaldehyde 8% and glutaraldehyde 8% showed to have the highest antifungal activities. Synergetic fungicidal activity of comercial disinfectants, dependent on time and concentration.

Keywords: Disinfectant, Formaldehyde, Glutaraldehyde, Microten, Alcohol 70, Savlon–alcohol, saprophytic fungi.

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