

Systemic fungal infections caused by *Candida* species: epidemiology, infection process and virulence attributes.

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Abstract

Candida species, in particular *C. albicans*, represent a major threat to immunocompromised patients. Able to exist as a commensal on mucosal surfaces of healthy individuals, these opportunistic fungi frequently cause superficial infections of mucosae and skin. Furthermore, in hospital settings, *Candida* species may cause life-threatening invasive infections in a growing population of vulnerable patients. In fact, candidaemia is associated with the highest crude mortality of all bloodstream infections. *Candida* cells may enter the bloodstream by direct penetration from epithelial tissues, due to damage of barriers in the body caused by surgery, polytrauma or drug treatment, or may spread from biofilms produced on medical devices. From the bloodstream, cells may infect almost all organs but appear to prefer certain organs depending upon the route of infection. The exact mechanisms by which *Candida* cells survive the challenge of the blood environment and escape from the bloodstream to cause deep-seated infections have not yet been elucidated, but various investigations are reviewed. It is clear, however, that *Candida* must have particular attributes which enable the organism to survive and grow within the environment of healthy individuals and to invade tissues in the immunocompromised host. Most

studies have focussed on *C. albicans* and this review will therefore summarise work on the various known virulence factors and methods used to identify further virulence attributes of this fungus.

Involved units

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