

Candida and invasive candidiasis: Back to basics.

ABSTRACT

The ubiquitous *Candida* spp. is an opportunistic fungal pathogen which, despite treatment with antifungal drugs, can cause fatal bloodstream infections (BSIs) in immunocompromised and immunodeficient persons. Thus far, several major *C. albicans* virulence factors have been relatively well studied, including morphology switching and secreted degradative enzymes. However, the exact mechanism of *Candida* pathogenesis and the host response to invasion are still not well elucidated. The relatively recent discovery of the quorum-sensing molecule farnesol and the existence of quorum sensing as a basic regulatory phenomenon of the *C. albicans* population behavior has revolutionized *Candida* research. Through population density regulation, the quorum-sensing mechanism also controls the cellular morphology of a *C. albicans* population in response to environmental factors, thereby, effectively placing morphology switching downstream of quorum sensing. Thus, the quorum-sensing phenomenon has been hailed as the 'missing piece' of the pathogenicity puzzle. Here, we review what is known about *Candida* spp. as the etiological agents of invasive candidiasis and address our current understanding of the quorum-sensing phenomenon in relation to virulence in the host.

Keyword: *Candida*; Candidiasis; Invasive.