

Abstract

Over the last 2 decades, platelets have been recognized as versatile players of innate immunity. The interaction of platelets with fungal pathogens and subsequent processes may critically influence the clinical outcome of invasive mycoses. Since the role of platelets in Candida infections is poorly characterized and controversially discussed, we studied interactions of human platelets with yeast cells, (pseudo-)hyphae, biofilms and secretory products of human pathogenic Candida species applying platelet rich plasma and a whole blood model. Incubation of Candida with platelets resulted in moderate mutual interaction with some variation between different species. The rate of platelets binding to -Candida (pseudo-) hyphae and candidal biofilm was comparably low as that to the yeast form. Candida-derived secretory products did not affect platelet activity - neither stimulatory nor inhibitory. The small subset of platelets that bound to Candida morphotypes was consequently activated. However, this did not result in reduced growth or viability of the different Candida species. A whole blood model simulating in vivo conditions confirmed platelet activation in the subpopulation of Candida-bound platelets. Thus, the inability of platelets to efficiently react on Candida presence might favor fungal survival in the blood and contribute to high morbidity of Candida sepsis.

Beteiligte Abteilungen und Gruppen

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