

Effects of the glucocorticoid betamethasone on the interaction of *Candida albicans* with human epithelial cells.

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Abstract

The glucocorticoid betamethasone (BM) is frequently employed in clinical practice because of its anti-inflammatory and immunosuppressive properties. In this study, we investigated the effect of BM (1 and 2 mM) on the ability of *Candida albicans* to adhere to, invade and damage oral, intestinal or vaginal epithelial cells, as well as to elicit cytokine and chemokine release. BM at 2 mM concentration stimulated adherence of *C. albicans* to vaginal cells and facilitated the invasion of intestinal and vaginal epithelia without influencing the growth rate of invading *C. albicans* hyphae at any type of epithelia and BM concentrations tested. In addition, BM at 2 mM concentration also augmented *C. albicans*-initiated cell damage of oral and intestinal cells. Furthermore, BM exposure decreased IL-6 cytokine and IL-8 chemokine release from oral and vaginal epithelial cells and also IL-6 release from intestinal epithelium after infection with *C. albicans*. These observations suggest that high-dose applications of BM may predispose patients to various epithelial *C. albicans* infections.

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