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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