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Baofukang suppository promotes the repair of vaginal epithelial cells in response to *Candida albicans*

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Statement of the Problem: Vulvovaginal candidiasis (VVC) is an opportunistic fungal infection predominantly caused by *Candida albicans* affecting a significant number of women of reproductive age. The Chinese medicine, the Baofukang suppository is widely used in the clinic for its antimicrobial activity and is therefore of great interest as a potential antifungal drug for the prevention of VVC.

Methodology & Theoretical Orientation: We evaluated the cytotoxic activity of the Baofukang suppository using the VK2/E6E7 vaginal epithelial cell (VEC) line. An ELISA analysis was made to evaluate three kinds of cytokines (Th1, Th2 and Th17 types) and non-B IgG in the supernatants. SEM was conducted to observe ultrastructural changes of VECs.

Findings: When treated with the Baofukang suppository, all of the immunocompetent cytokines and chemokines (e.g., IL-2, IL-4, IL-6, IL-8, and IL-17) by infected VK2/E6E7 cells was statistically up-regulated ($P<0.05$), except IL-4 (11.70±1.82 vs. 14.88±4.72, $P=0.343$) compared to the infected control cells. The secretion of non-B IgG also exhibited the same trend. Our scanning electron microscopy results revealed that C. albicans can invade VECs by both induced endocytosis and active penetration. The Baofukang suppository could effectively inhibit the adhesion, hyphal formation, and proliferation, as well as notably restore the vaginal epithelial cell morphology, viability, and enhance the local immune function of the VECs.

Conclusion & Significance: These preliminary results suggest promising antimicrobial properties of the Baofukang suppository, which may be efficacious as an antifungal therapy candidate via up-regulating Th1 cellular immunity, the Th17-axis of the innate immune response, and the secretion of vaginal epithelial-derived IgG. These combined effects collectively restore the immune function of the infected VECs against *Candida albicans in vitro*.

Biography

Ting Li has her expertise in female genital tract infection diseases.

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