Inhibition of Epithelial Cell ERS Induced by AE Alleviates Epithelial Barrier Dysfunction in LAR

Feng Xiang[1], Hui Zhang[1], Ran Jing[1], Jie Zheng[1], Jianfeng Zhang[1], Qinxiu Zhang[1], and Xinrong Li[1]

[1]Chengdu University of Traditional Chinese Medicine

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Abstract

Background: Epithelial barrier disruption is the initial pathogenesis of various diseases. We previously reported that acupoint catgut embedding (AE) improved tight junction proteins in rats with allergic rhinitis. However, whether AE benefits the epithelial barrier in local allergic rhinitis (LAR) is unknown. Methods: In the present study, we used LAR model rats with or without AE treatment to investigate the effect of AE on nasal mucosal barrier function. Then, the LAR model rats were treated with capsaicin or tunicamycin (TM) to investigate the mechanism of AE on LAR. Results: AE ameliorated symptoms and pathological changes of nasal mucosa in LAR rats. In addition, AE reduced inflammatory factors (IL4, IL5, IL13) and inhibited endoplasmic reticulum stress (ERS) by reducing substance P (SP). Finally, AE improved the epithelial barrier function in LAR by suppressing ERS. Conclusion: the present study strongly confirms that AE is an effective method to improve nasal barrier function and prevent LAR barrier damage.

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