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小檗碱减轻炎症反应时肠上皮屏障功能损害的实验

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Title: Attenuation of intestinal epithelial barrier disruption by berberin during inflammation *in vitro*

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关键词: [小檗碱](#); [干扰素 \$\gamma\$](#) ; [肿瘤坏死因子- \$\alpha\$](#) ; [肠上皮](#); [肌球蛋白轻链](#); [屏障功能](#)

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摘要: 目的 研究小檗碱(berberine, BBR)在炎症反应时对肠上皮屏障功能的保护作用。方法 建立人肠上皮细胞株Caco-2单层培养模型,将单层细胞分为对照组、BBR组、TNF- α +IFN- γ 组、TNF- α +IFN- γ +BBR组。用电阻仪测定跨单层肠上皮细胞电阻(TER),测定时相点为处理后0、6、12、24、36 h和48 h;免疫荧光法和蛋白质印迹法检测紧密连接蛋白Occludin的分布及表达变化;蛋白质印迹法检测肌球蛋白轻链(MLC)和磷酸化肌球蛋白轻链(pMLC)的蛋白表达。结果 对照组与BBR组TER均无明显变化;TNF- α +IFN- γ 组TER逐渐下降,并于12、24、36 h及48 h显著低于0 h ($P<0.05$);TNF- α +IFN- γ +BBR组也呈逐渐下降趋势,但降幅小于TNF- α +IFN- γ 组,并于12、24、36 h及48 h显著高于TNF- α +IFN- γ 组 ($P<0.05$)。各组紧密连接蛋白Occludin表达无明显变化 ($P>0.05$);但TNF- α +IFN- γ 组Occludin形态有明显变化,并发生重分布,而TNF- α +IFN- γ +BBR组Occludin形态变化则较TNF- α +IFN- γ 组明显减轻。TNF- α +IFN- γ 组pMLC表达显著高于对照组或BBR组 ($P<0.05$),而TNF- α +IFN- γ +BBR组pMLC表达则明显低于TNF- α +IFN- γ 组 ($P<0.05$)。结论 小檗碱通过降低MLC磷酸化水平,改善紧密连接蛋白定位分布变化,从而减轻炎症反应时肠上皮屏障功能损害。

Abstract: Objective To investigate the protective effect of berberine (BBR) on intestinal epithelial barrier function during inflammation and the underlying mechanism. Methods The intestinal epithelial cell line Caco-2

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monolayers were divided into a control group, a BBR group, a TNF- α +IFN- γ group and a TNF- α +IFN- γ +BBR group. Both of TNF- α and IFN- γ were used at the final concentration of 10 ng/mL, and BBR was used at 100 μ mol/L. The transepithelial electrical resistance (TER) was measured with a Volt-Ohm Meter at 0, 6, 12, 24, 36 and 48 h after treatment. Both Western blot analysis and immunofluorescence assay were used to analyze the tight junction protein occludin. The protein expression of myosin light chain (MLC) and phosphorylated MLC (pMLC) was analyzed by Western blot analysis.

Results The TER had no significant change in the control group and BBR group after treatment. In the TNF- α + IFN- γ group, TER decreased gradually after treatment, and was significantly lower at 12, 24, 36 and 48 h than that before treatment ($P<0.05$). In the TNF- α + IFN- γ + BBR group, TER also decreased gradually after treatment, but was significantly higher than that in the TNF- α + IFN- γ group at 12, 24, 36 and 48 h after treatment ($P<0.05$). The protein expression of occludin in each group did not change significantly after treatment ($P>0.05$). However, the remarkable morphological relocation with expanded intracellular pools of occludin was observed in the TNF- α + IFN- γ group, which was attenuated obviously in the TNF- α + IFN- γ + BBR group. The pMLC protein expression in the TNF- α + IFN- γ group was significantly higher than that in other 3 groups ($P<0.05$).

Conclusion BBR alleviates intestinal epithelial barrier disruption during inflammation by reducing MLC phosphorylation level and attenuating the morphological relocation of tight junction protein occludin.

参考文献/REFERENCES

曹敏, 黄家君. 小檗碱减轻炎症反应时肠上皮屏障功能损害的实验研究[J]. 第三军医大学学报, 2013, 35(5): 447-450.

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