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论著

Th1/Th2细胞炎性因子在大鼠溃疡性结肠炎治疗模型中的表达

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摘要：

目的: 探讨Th1/Th2细胞因子IL-2,干扰素-γ(interferon-γ,IFN-γ),IL-4和IL-10在葡聚糖酸钠 (dextran sulfate sodium,DSS) 诱导的大鼠实验性溃疡性结肠炎治疗模型中的表达。方法: 雄性Sprague Dawley 大鼠40只,随机均分为正常组、模型组、柳氮磺嘧啶治疗组(SASP组)、结肠宁治疗组(结肠宁组),每组各10只。对各组大鼠进行疾病活动指数评分 (disease activity index,DAI) 及结直肠组织损伤学评分,运用酶联免疫吸附测定(enzyme-linked immunosorbent assay,ELISA)及real-time PCR检测血清及肠黏膜组织中细胞因子IL-2,IFN-γ,IL-4和IL-10含量水平。结果: 与模型组比较,结肠宁组大鼠的DAI及结直肠组织损伤学评分均明显下降 (均P<0.05);但与SASP组比较,差异无统计学意义 (P>0.05)。血清和组织中IL-2表达在治疗前后的各组间比较,差异均无统计学意义 (均P>0.05)。SASP组和结肠宁组血清及肠黏膜组织IFN-γ水平较模型组下调,血清中差异均有统计学意义 (均P<0.05),肠黏膜组织中仅结肠宁组差异均有统计学意义 (均P<0.05)。SASP组和结肠宁组血清IL-4水平较模型组均上调,但只有结肠宁组差异有统计学意义 (P<0.05);而肠黏膜组织中差异均无统计学意义(均P>0.05)。SASP组和结肠宁组血清及肠黏膜组织IL-10水平较模型组上升,差异均有统计学意义(均P<0.05)。SASP组和结肠宁组血清及肠黏膜组织中细胞因子IL-2,IFN-γ,IL-4和IL-10含量水平比较,差异均无统计学意义 (均P>0.05)。结论: DSS造模破坏Th1/Th2在结肠中的表达平衡。结肠宁能改善DSS所致的实验性溃结大鼠模型炎症,通过上调血清和肠黏膜组织IL-10水平、下调IFN-γ水平可保持Th1/Th2细胞间平衡,从而改善免疫功能。

关键词： 溃疡性结肠炎 结肠宁灌肠剂 I类T辅助细胞/II类T辅助细胞 葡聚糖硫酸钠 大鼠模型

Expression of Th1/Th2 inflammatory cytokines in rat treatment model of ulcerative colitis

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Abstract:

Objective: To investigate the expression of Th1/Th2 inflammatory cytokines IL-2, interferon-γ (IFN-γ), IL-4, and IL-10 in rat treatment model of dextran sulfate sodium (DSS) -induced ulcerative colitis.
Methods: Forty Sprague Dawley (SD) male rats were divided into a normal group, a colitis model group, a sulfasalazine(SASP)-treatment group (SASP group) and a Jiechangning-treatment group (Jiechangning group) (each group n=10). Disease activity index (DAI) and colorectal histological damage scale were assessed. The expression levels of cytokines IL-2, IFN-γ, IL-4, and IL-10 in the serum and the colon mucosa tissues were detected by enzyme-linked immuno sorbent assay (ELISA) and real time polymerase chain reaction (RT-PCR).
Results: Compared with the colitis model group, the DAI and colorectal histological damage scale were decreased in the Jiechangning group (both P<0.05), but there was no obvious difference compared with the SASP group (P>0.05). There was no significant difference in IL-2 expression both in the serum and the colon mucosa tissues before or after the treatment in various groups (P>0.05). Compared with the colitis model group, IFN-γ level both in the serum and the colon mucosa tissues was decreased in the SASP group and the Jiechangning group, with significant difference in the serum (both P<0.05), but there was significant difference in the colon mucosa tissues only in the Jiechangning group (P<0.05). The serum IL-4 level in the SASP group and the Jiechangning group was increased compared with that in the colitis control group, with significant difference only in the Jiechangning group (P<0.05). There was no difference in IL-4 level in the colon mucosa tissues whether treated or not (P>0.05). IL-10 level both in the serum and the colon mucosa tissues in the SASP group and the Jiechangning group was increased compared with that in the colitis model group, with significant difference (all P<0.05). There was no difference in the expression level of cytokines IL-2, IFN-γ, IL-4, and IL-10 both in the serum and the colon mucosa tissues between the SASP group and the Jiechangning group (all P>0.05).
Conclusion: DSS can break the balance of Th1/Th2 expression in the colon. Jiechangning enema can

ameliorate DSS-induced acute experimental colitis in rats by decreasing IFN-γ level and increasing IL-10 level both in the serum and the colon mucosa tissues to regulate the Th1/Th2 balance and improve immunity.

Keywords: ulcerative colitis　Jiechangning enema　helper T cells-1/helper T cells-2　dextran sulfate sodium　rat model

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