中国药理学与毒理学杂志 2009 23 (1): 39-44 ISSN: 1000-3002 CN: 11-1115/R

论著

岩黄连总碱提取物对小鼠免疫性肝损伤的改善作用

毕明刚[1*], 周 娟[2], 许 扬[1], 孙 虹[1], 季宇彬[2]

(1. 中国医学科学院药用植物研究所, 北京 100094; 2. 哈尔滨商业大学, 黑龙江 哈尔滨 150076)

收稿日期 2008-6-25 修回日期 网络版发布日期 2009-1-21 接受日期 2008-9-27

摘要 目的 探讨岩黄连总碱提取物（CTFTAE）对小鼠免疫性肝损伤的改善作用及其可能机制。方法 小鼠尾静脉iv给予卡介苗和脂多糖制备免疫性肝损伤小鼠模型。注射卡介苗当天ip给予CTFTAE 0.26, 0.78和2.34 mg·kg^{-1}，每天1次，共12 d。末次给药后尾静脉iv给予脂多糖（7.5 μg），16 h后检测小鼠血清谷丙转氨酶（GPT）和谷草转氨酶（GOT）活性；HE染色，光镜下观察肝组织病理变化；ELISA法检测血清干扰素γ（IFN-γ）和白细胞介素4（IL-4）的含量。［^{3}H］TdR掺入法测定CTFTAE体外对小鼠脾淋巴细胞增殖反应的影响。结果 模型组小鼠血清GPT和GOT活性较正常对照组明显升高；CTFTAE 0.26, 0.78和2.34 mg·kg^{-1}剂量组血清GPT活性较模型组明显降低，GOT活性无明显变化。模型组可见明显的肝细胞溶解坏死，而CTFTAE 0.78和2.34 mg·L^{-1}组肝细胞变性、坏死及炎症细胞浸润均明显减轻。模型组小鼠血清IFN-γ和IL-4含量升高，IL-4升高较明显，IFN-γ/IL-4比值降低；CTFTAE 0.26，0.78和2.34 mg·kg^{-1}组IL-4含量降低，IFN-γ/IL-4比值升高。CTFTAE 15～1500 mg·L^{-1}体外单独应用可增强小鼠脾脏淋巴细胞增殖反应，亦可增强刀豆蛋白A诱导的脾淋巴细胞增殖反应。结论 CTFTAE对免疫性肝损伤具有改善作用，其机制可能与其调节辅助性T细胞(Th)1/Th2平衡有关。

关键词 岩黄连 生物碱 免疫性肝损伤 干扰素γ 白细胞介素4

分类号 R285.5, R967

Improving effect of total alkaloids extract from *Corydalis thalictrifolia* Franch. on immune hepatic injury in mice

BI Ming-Gang[1*], ZHOU Juan[2], XU Yang[1], SUN Hong[1], JI Yu-Bin[2]

(1. Institute of Medicinal Plant Development, Chinese Academy of Medical Sciences, Beijing 100094, China; 2. Harbin University of Commerce, Harbin 150076, China)

Abstract

AIM To investigate the improving effect of *Corydalis thalictrifolia* Franch. total alkaloids extract(CTFTAE) on immune hepatic injury in mice and its possible mechanism. **METHODS** The mouse model with immune hepatic injury was prepared by injecting bacillus Calmette-Guerin(BCG) and lipopolysaccharides(LPS) through tail veins. On the same day when BCG injected, CTFTAE（0.26, 0.78 and 2.34 mg·kg^{-1}, respectively） was ip given, once daily, for 12 d. Then LPS (7.5 μg) were injected through tail veins on the last day of CTFTAE treatment. After 16 h, the activities of glutamic-pyruvic transaminase(GPT) and glutamic-oxaloacetic transaminase(GOT) were determined in serum, and the pathological changes in liver tissue were observed under light microscope. The contents of interferon-γ（IFN-γ） and interleukin-4(IL-4) in serum were detected by ELISA. In addition, the effect of CTFTAE on splenocyte proliferation *in vitro* was observed by ［^{3}H］TdR incorporation assay. **RESULTS** The activities of GPT and GOT in serum were obviously increased in model group than that in normal control group. Compared with model group, GPT activity obviously decreased in CTFTAE 0.26, 0.78 and 2.34 mg·kg^{-1} groups, but GOT activity had no significant change. It was observed that some liver cells obviously dissolved and necrotized in model group, and CTFTAE 0.78 and 2.34 mg·kg^{-1} alleviated the hepatic cell degeneration, necrosis and inflammatory cell infiltration. The serum contents of INF-γ and IL-4 increased in model group compared with normal group, and IL-4 content increased more significantly, and the IFN-γ/IL-4 declined. CTFTAE 0.26, 0.78 and 2.34 mg·kg^{-1} reduced the content of IL-4, and elevated the ratio of IFN-γ/IL-4. Furthermore, CTFTAE 15-1500 mg·L^{-1} could increase splenocyte proliferation *in vitro* both used alone and combined with concanavalin A. **CONCLUSION** CTFTAE can alleviate the immune hepatic injury, which may be related with its regulation of the balance between helper T cells (Th)1 and Th2.

Key words Corydalis thalictrifolia Franch. alkaloids immune hepatic injury interferon-γ interleukin-4

DOI:

通讯作者 毕明刚 mgbi@implad.ac.cn