中国公共卫生 2014, 30(3) 305-307 DOI: 10.11847/zgggws2014-30-03-16 ISSN: 1001-0580 CN: 21-1234/R

论文

EGCG对酒精性肝病小鼠肝脏铁调素表达影响

韦远欢, 施文祥, 任源

桂林医学院公共卫生学院, 广西 桂林 541004

摘要：

目的 探讨表没食子儿茶素没食子酸酯（EGCG）对酒精性肝病（ALD）小鼠肝脏铁调素（hepcidin）mRNA表达影响。方法 6~8周龄雄性SPF级C57/BL6 小鼠随机分为对照组和造模组，造模组小鼠每日给予乙醇灌胃，并于造模第9 周随机分为模型组，EGCG 10、20、30 mg/kg组，4 周后处死小鼠，观察各组小鼠肝脏病理变化，测定谷丙氨酸转氨酶（ALT）、天冬氨酸转氨酶（AST）水平、肝脏铁含量，采用real-time PCR方法检测肝组织铁调素mRNA表达。结果 与对照组比较，模型组小鼠血清ALT、AST[分别为（237.25±50.26）、（442.38±56.31）U/L]水平升高（*P*<0.01）；肝脏病理观察显示，肝细胞呈中度脂肪变性；肝组织铁含量显著升高，肝脏铁调素mRNA表达[0.008±0.002]明显降低（*P*<0.01）；与模型组比较，EGCG 组小鼠血清ALT、AST水平[分别为（53.75±6.67）、（151.75±13.81）U/L]明显下降（*P*<0.01）；肝铁含量及肝脏hepcidin mRNA[0.051±0.011]表达显著升高（*P*<0.01）。结论 结论EGCG 可以上调ALD 小鼠肝脏铁调素 mRNA表达，抑制小肠铁吸收，对酒精性肝病具有一定保护作用。 关键词没食子儿茶素没食子酸酯（EGCG）；酒精性肝病（ALD）；铁过载；铁调素（hepcidin）

关键词： 没食子儿茶素没食子酸酯(EGCG) 酒精性肝病(ALD) 铁过载 铁调素(hepcidin)

Effects of epigallocatechin-3-gallate on expression of hepcidin mRNA in liver of mice with alcoholic liver disease

WEI Yuan-huan, SHI Wen-xiang, REN Yuan

Public Health School, Guilin Medical University, Guilin, Guangxi Zhuang Autonomous Region 541004, China

Abstract:

Objective To study effects of epigallocatechin-3-gallate (EGCG) on hepcidin mRNA in liver of mice with alcoholic liver disease (ALD) and to explore its mechanism.Methods C57/BL6 mice were randomly divided into a normal group and a model group. Alcoholic liver disease was induced by gavage of alcohol for 12 weeks.At the end of 8 weeks,the alcohol group was divided into a model group and three EGCG groups(10,20,and 30 mg • kg^{-1}).The mice in the EGCG groups received an intraperitoneal injection of EGCG and simultaneous intragastric administration of alcohol for 4 weeks.Liver injuries were assessed with histopathologic examination and serum alanine aminotransferase (ALT),aspartate aminotransferase (AST) levels.In addition,liver iron levels were evaluated.Hepcidin mRNA in liver tissue was also determined with real-time PCR.Results The mice in model group had marked increases in serum ALT,AST levels and liver iron concentration compared with normal group,and their liver tissues showed moderate hepatocyte fatty degeneration.But the mice in EGCG groups had decreased ALT,AST levels and liver iron concentration and improved pathological changes.Liver hepcidin mRNA expression level was decreased significantly in model group compared with the normal group,but markedly increased in EGCG treatment groups.Conclusion Compared with model group,the hepcidin mRNA expression in livers of EGCG treatment ALD mice increases,and EGCG may play a protective role in the development of ALD.The possible mechanism of the effect may relate to EGCG inhibiting iron absorption in small intestine by the upregulation of hepcidin.

Keywords: epigallocatechin-3-gallate alcoholic liver disease iron overload hepcidin

收稿日期 2013-08-28 修回日期 网络版发布日期 2014-01-08

DOI: 10.11847/zgggws2014-30-03-16

基金项目:

广西自治区教育厅项目（200103YB090）；桂林医学院“项目驱动教学法”专项课题

通讯作者: 任源

作者简介:

参考文献：

[1] Harrison-findik DD,Klein E,Evans J,et al.Regulation of liver hepcidin expression by alcohol *in vivo* does not involve Kupffer cell activation or TNF-alpha signaling [J].Am J Physiol Gastrointest Liver Physiol,2009,296:112-118.
[2] Ohtake T,Saito H,Hosoki Y,et al.Hepcidin is down-regulated in alcohol loading [J].Alcohol Clin Exp Res,2007,31(1):S2-8.
[3] Bridle K,Chetng TK,Murphy T,et al.Hepcidin is down-regulated in alcoholic liver injury:implications for the pathogenesis of alcoholic liver disease[J].Alcohol Clin Exp Res,2006,30 (1):106-112.
[4] Nicolas G,Bennoun M,Porteu A,et al.Severe iron deficiency anemia in transgenic mice expressing liver hepcidin[J].Proc Natl Acad Sci USA,2002,99 :4596-4601.
[5] 李相武,童玲玲,李东阳.茶多酚对人肝癌细胞激活蛋白1 及细胞周期影响[J].中国公共卫生,2006,22(6):327-328.
[6] 刘甜甜,赵海峰.植物化学物对阿尔茨海默病保护作用研究进展[J].中国公共卫生,2013,29(5) :772-775.

本刊中的类似文章

1．韦艳, 张海英, 梁钢.EGCG逆转肝癌耐多药差异基因表达[J]. 中国公共卫生, 2011,27(5): 579-581

2．杜桂花, 陈英, 黎砚书, 焦欢, 周繁坤, 祝高春, 冯昶, 范广勤.染铅大鼠铁过载致神经元损伤特殊染色法分析[J]. 中国公共卫生, 2014,30(2): 197-200

文章评论 (请注意:本站实行文责自负, 请不要发表与学术无关的内容!评论内容不代表本站观点.)

反馈人		邮箱地址	
反馈标题		验证码	8449