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论文

Nrf2在小鼠非酒精性脂肪性肝病发病机制中的作用

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摘要：

目的 研究高脂饮食诱导的实验小鼠在非酒精性脂肪性肝病（nonalcoholic fatty liver disease， NAFLD）形成不同阶段，核因子相关因子-2（NF-E2-related factor 2， Nrf2)表达的变化情况。方法 通过高脂饮食建立小鼠非酒精性脂肪性肝病的模型（实验组），同期设正常饮食组作为对照组。并在8、12周末分批处死，检测丙氨酸氨基转移酶（alanine aminotransferase， ALT）、总胆红素（total bilirubin， TBIL）、甘油三酯(triglyceride，TG)、胆固醇（cholesterol， CHOI）、血糖（glucose， GLU），计算肝指数；观察肝脏组织病理学改变，并用免疫组化方法检测Nrf2的表达。结果 实验组小鼠第8周末病理变化呈单纯脂肪肝改变，第12周末进展为脂肪性肝炎。8、12周末实验组小鼠血清ALT、CHOI和肝脏组织Nrf2表达均明显高于同期对照组（P＜0.01）；与8周末实验组小鼠比较，12周末实验组小鼠的肝脏组织Nrf2表达明显增高（P＜0.01）。Nrf2表达与ALT、GLU、CHOI、肝指数成明显正相关（P＜0.01）。结论 随着非酒精性脂肪性肝病的发生和发展，Nrf2表达上调，提示其对该病中氧化应激所致炎症损伤的保护作用。

关键词： 核因子相关因子-2；氧化应激；非酒精性脂肪性肝病

Role of Nrf2 on the mechanism of nonalcoholic fatty liver disease in mice

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Abstract:

To study the change of expression of NF-E2-related Factor 2 (Nrf2) at different phases of mouse nonalcoholic fatty liver disease(NAFLD）induced by high fat diet. MethodsTwenty six female KM mice were randomly divided into two groups: the control group (normal diet)and the model group (high fat diet).All mice were sacrificed at the end of 8 or 12 weeks to test the levels of serum alanine aminotransferase (ALT), triglyceride(TG), cholesterol(CHOI), total bilirubin(TBIL), glucose(GLU), liver index and pathologic changes in the liver, also expression of Nrf2 was detected by immunohistochemistry. ResultsSimple fatty liver was observed in the model group at the end of 8th week, until the end of 12th week, and the liver gradually developed steatohepatitis. Compared with the control group, levels of ALT and CHOI increased, while Nrf2 expression in liver tissue was up-regulated(P＜0.01). Compared with the 8th week model group, Nrf2 expression in liver tissue was significantly higher in the 12th week model group(P＜0.01). Nrf2 expression was positively correlated with ALT, GLU, CHOI and liver index(P＜0.01). ConclusionWith the development of NAFLD, expression of Nrf2 was up-regulated, which indicates that it may protect the liver from inflammation damage induced by oxidative stress.

Keywords: NF-E2-related Factor 2; Oxidative stress; Nonalcoholic fatty liver disease

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