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论著

绿茶对微囊藻毒素LR诱导肝细胞凋亡、Bcl-2表达及骨髓嗜多染红细胞微核的影响

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摘要 背景与目的: 研究绿茶(green tea,GT)对微囊藻毒素LR(MC-LR)诱导肝细胞凋亡、Bcl-2蛋白表达及微核发生的影响以探讨毒性拮抗机制。 材料与方法: 雄性小鼠50只随机分为5组，分别为空白对照、MC-LR染毒组、GT高低剂量拮抗组和环磷酰胺对照组。实验第1 d起GT高、低剂量拮抗组小鼠每日分别给予12 g/L和2 g/L两种浓度的GT自由饮用，连续18 d。自第6 d开始，染毒小鼠每日给予MC-LR 10 μg/kg腹腔注射1次，空白对照给予DMSO腹腔注射，连续13 d。环磷酰胺对照组以50 mg/kg剂量间隔24 h两次给药后6 h取材。小鼠处死后采用免疫组化和计数法对肝细胞凋亡、Bcl-2蛋白表达以及骨髓嗜多染红细胞(PCEs)微核发生率进行检测和分析。结果: (1) MC-LR染毒明显诱导小鼠肝细胞凋亡增加。高剂量GT处理后明显抑制MC-LR染毒所致小鼠肝细胞凋亡的发生(P<0.05)；(2) 单纯MC-LR染毒肝细胞Bcl-2表达未见明显变化，GT各剂量组小鼠肝脏Bcl-2的表达明显增加，与MC-LR染毒组相比差异具有统计学意义(P<0.01)。(3) GT拮抗组小鼠骨髓嗜多染红细胞微核率(PCEs-MN) 与MC-LR染毒对照和空白对照相比，其差异均无统计学意义(P>0.05)。结论: GT能上调抑癌基因Bcl-2的表达，抑制细胞凋亡。MC-LR染毒及GT拮抗对微核发生均未有显著影响。

关键词 绿茶； 微囊藻毒素LR； 凋亡； Bcl-2； 微核

Effect of Green Tea on Microcystin-LR-induced Hepatocelluar Apoptosis, Bcl-2 Expression and Micronucleus

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Abstract BACKGROUND & AIM: To evaluate the effects of green tea (GT) on Microcystin-LR (MC-LR)-induced hepatocelluar apoptosis, Bcl-2 expression and micronucleus test so as to explore antagonistic mechanism of GT. MATERIALS AND METHODS: 50 male mice were randomly divided into five groups. Mice in GT pretreated groups were given green tea as free drink at doses of 2 g/(L·d) and 12 g/(L·d) prior to MC-LR intoxication, consecutively for 18 days. The toxin treatment mice in group MC-LR control received continual intraperitoneal injections of MC-LR at dose of 10 μg/(kg·d) for 13 days from day 6 till sacrifice. CP control group was treated with intraperitoneal cyclophosphamide twice at dose of 50 mg/(kg·d) 24 h interval on days 17 and 18. Mice were sacrificed and immediately subjected to autopsy. Hepatocellular apoptosis, Bcl-2 protein expression and micronucleus frequencies of bone marrow were evaluated immediately. RESULTS: (1) MC-LR induced obvious hepatocellular apoptosis. High dose of GT pretreatment significantly inhibited MC-LR-induced hepatocellular apoptosis(P<0.05).(2) There was no significant change of Bcl-2 protein expression in MC-LR control compared with control. As compared with only MC-LR, the expression of Bcl-2 protein was significantly increased in GT pretreatment groups(P<0.01).(3) No significant difference in micronucleus frequencies was found in either MC-LR control or GT pretreatment groups compared with control (P>0.05). CONCLUSION: GT could increase Bcl-2 protein expression and inhibit hepatocellular apoptosis, MC-LR and GT pretreatment did not cause

damage to mice chromosome.

Keywords green tea microcystin-LR apoptosis bcl-2 micronucleus

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