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搜索

沙棘油对汞致急性肝、肾损伤的保护作用

引用本文：王家骏,喻道军,刘艳,李哲.沙棘油对汞致急性肝、肾损伤的保护作用[J].劳动医学,2011,28(2):109-111,116.

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摘要：目的探讨急性染汞致大鼠肝、肾毒性的作用机制,观察沙棘油(SBO)的保护作用。方法124只Wistar大鼠随机均分为:阴性对照组(皮下注射0.9%生理盐水);染汞组(皮下注射2.5mg/kgHgCl₂);SBO+HgCl₂组灌胃SBO(体积分数为95%)5mL/kg,2h后皮下注射2.5mg/kgHgCl₂。染汞后12h将大鼠移入代谢笼,收集12h尿样。染汞48h后处死,采取血样和肝肾组织。测定肝脏、肾皮质和尿汞含量;尿N-乙酰-β-D-氨基葡萄糖苷酶(NAG)、碱性磷酸酶(ALP)、乳酸脱氢酶(LDH)活性和尿蛋白、血清尿素氮(BUN)含量;肝、肾中谷胱甘肽(GSH)、丙二醛(MDA)、蛋白含量和超氧化物歧化酶(SOD)、谷胱甘肽过氧化物酶(GSH-Px)活性。结果与对照组相比,HgCl₂组、SBO+HgCl₂组的肝、肾皮质及尿汞含量均明显增加(P<0.01);与HgCl₂组相比,SBO+HgCl₂组尿汞含量增加(P<0.05)。HgCl₂组尿NAG、ALP、LDH活性和尿蛋白、BUN含量均明显高于对照组(P<0.01);SBO+HgCl₂组NAG、ALP活性和BUN含量均低于HgCl₂组(分别为P<0.05,P<0.01和P<0.01)。与对照组相比,HgCl₂组肝、肾GSH含量、GSH-Px活性、SOD活性均下降(P<0.01),MDA含量增加(P<0.05或P<0.01);SBO+HgCl₂组与HgCl₂组相比,其肝GSH-Px活性明显增加(P<0.01)。结论大鼠经一次染汞后可致急性肝、肾损伤。沙棘油具有促进汞从肾脏排出的作用,对汞致肝脏氧化损伤有一定保护作用。

关键词：汞 氧化损伤 沙棘油

Protective Effects of Seabuckthorn Oil on Mercury Induced Acute Liver and Kidney Damage

WANG Jia-jun,YU Dao-jun,LIU Yan,LI Zhe.Protective Effects of Seabuckthorn Oil on Mercury Induced Acute Liver and Kidney Damage[J].Journal of Labour Medicine,2011,28(2):109-111,116.

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Abstract: Objective] To study intoxication mechanism in liver and kidney induced by HgCl₂, and to observe the protective effects of seabuckthorn oil (SBO). Methods] Twenty-four Wistar rats were randomly divided into 3 groups : control group rats were injected subcutaneously with 0.9% saline; HgCl₂ group rats were injected subcutaneously with 2.5 mg/kg HgCl₂; and SBO + HgCl₂ group rats were given SBO 5 mL/kg by gavage two hours before subcutaneous injection with HgCl₂ 2.5 mg/kg. Twelve hour urine was collected after 12 hours of HgCl₂ injection, while the blood, kidney and liver were collected after 48 hours of the injection. Mercury contents in liver, renal cortex and urine, N-acetyl-β-D-glucosaminidase (NAG), alkaline phosphatase (ALP), lactate dehydrogenase (LDH) activities, protein and blood urea nitrogen (BUN) contents in urine were determined. Reduced glutathione hormone (GSH), malondialdehyde (MDA), protein contents and glutathione peroxidase (GSH-Px) as well as superoxide dismutase (SOD) activities in the liver and renal cortex were also determined. Results] Compared with the control group, mercury levels in liver, renal cortex and urine in HgCl₂ group and SBO + HgCl₂ group were significantly increased (P < 0.01). Compared with HgCl₂ group, urinary mercury levels in SBO + HgCl₂ group was increased (P < 0.05). NAG, ALP, LDH activity and urinary protein, BUN levels in urine of HgCl₂ group were all significantly higher than those of control group (P < 0.01). NAG, ALP activity and BUN levels in urine of SBO + HgCl₂ group were lower than those of HgCl₂ group, P < 0.05, P < 0.01, and P < 0.01 respectively. Compared with the control group, GSH contents, GSH-Px activity, SOD activity in both liver and kidney decreased (P < 0.01), but MDA contents increased (P < 0.05 or P < 0.01). GSH-Px activity in liver of SBO + HgCl₂ group increased significantly than that of HgCl₂ group (P < 0.01). Conclusion] Injection of 2.5 mg/kg HgCl₂ could induce acute damage both in liver and kidney in rats. Seabuckthorn oil had an effect to promote mercury excretion from urine, hence showed some protective effect on mercury induced oxidative damage in the liver.

Keywords: mercury oxidative damage seabuckthorn oil

本文已被 维普 万方数据 等数据库收录！

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