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论著

万胜化风丹、雄黄和朱砂的急性肝肾毒性作用

颜俊文[1], 苗加伟[1], 何海洋[2], 时京珍[2], 吴 芹[1], 刘 杰[1], 石京山[1]

（1. 贵州省基础药理重点实验室, 遵义医学院药理教研室, 贵州 遵义 563003; 2. 贵阳中医学院实验中心基础医学实验室, 贵州 贵阳 550002）

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摘要 **目的** 研究万胜化风丹中雄黄和朱砂的肝肾毒性作用，探讨目前对其毒性评价指标的合理性。**方法** 成年昆明种小鼠分别一次性ig给予万胜化风丹（原方药）3 g·kg^{-1}、雄黄和朱砂减量的万胜化风丹（减量方药）3 g·kg^{-1}、不含雄黄和朱砂的万胜化风丹（减方药）3 g·kg^{-1}、雄黄0.3 g·kg^{-1}、朱砂0.3 g·kg^{-1}、亚砷酸钠 36 mg·kg^{-1}和氯化汞 0.07 g·kg^{-1}，8 h后检测肝及肾组织中砷和汞的含量，检测血清中谷草转氨酶(AST)、谷丙转氨酶(ALT)、肌酐(Cre)、尿素氮(BUN)含量；RT-PCR方法检测肝和肾中金属硫蛋白基因（MT-1）的表达。**结果** 亚砷酸钠、原方药及减量方药组肝和肾组织中砷的蓄积量明显增加（P<0.05），且亚砷酸钠＞原方药＞减量方药。亚砷酸钠组ALT显著升高，其他各组略有升高，但与正常对照组无显著差异。氯化汞和朱砂组肝肾组织中汞的蓄积量明显增加（P<0.05），且氯化汞组＞朱砂，氯化汞组同时伴Cre、BUN显著升高(P<0.05)。亚砷酸钠组、氯化汞组肝肾病理损伤明显，MT-1 mRNA在肝肾组织的高表达。**结论** 万胜化风丹、雄黄和朱砂的急性肝肾毒性远低于亚砷酸钠和氯化汞。

关键词 万胜化风丹 雄黄 朱砂 亚砷酸钠 氯化汞 急性毒性

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Acute hepatic and renal toxicy of Wansheng Huafeng Dan, realgar and cinnabar

YAN Jun-wen[1], MIAO Jia-wei[1], HE Hai-yang[2], SHI Jing-zheng[2], WU Qin[1], LIU Jie[1], SHI Jing-shan[1]

(1. Department of Pharmacology, Zunyi Medical College, Zunyi 563003, China; 2. Basic Medical Laboratory of Experimental Center, Guiyang College of Traditional Chinese Medicine, Guiyang 550002, China)

Abstract

OBJECTIVE To explore the hepatic and renal toxicy of realgar and cinnabar in Wansheng Huafeng Dan (WSHFD). **METHODS** Mice were ig given WSHFD 3 g·kg^{-1} that contained 0%, 3% or 10% realgar and cinnabar respectively, realgar 0.3 g·kg^{-1}, cinnabar 0.3 g·kg^{-1}, $NaAsO_2$ 0.036 g·kg^{-1} and $HgCl_2$ 0.07 g·kg^{-1}. Eight hours later, As and Hg contents in liver and kidneys, alanine aminotransferase (ALT), aspartate aminotransferase (AST), blood urea nitrogen (BUN) and creatinine (Cre), histopathology, and metallothionein 1 mRNA(MT-mRNA) expression were determined. **RESULTS** Accumulation of As in liver and kidneys in WSHFD containing 10% or 3% realgar and cinnabar groups and $NaAsO_2$ group was significantly higher than that in normal control group(P<0.05). Accumulation of Hg in kidneys in cinnabar and $HgCl_2$ groups was significantly higher than in WSHFD groups containing 10% realgar and cinnabar (P<0.05). Compared with normal control group and WSHFD groups containing 10% realgar and cinnabar, ALT activity significantly increased in $NaAsO_2$ group, and Cre and BUN significantly increased in $HgCl_2$ group. Compared with WSHFD groups containing 10% reaglar and cinnabar, the liver and kidneys in $NaASO_2$ and $HgCl_2$ groups were injured and MT-1 mRNA expression was upregulated (P<0.05). **CONCLUSION** Acute toxicity of realgar, cinnabar, and WSHFD is far below those of $NaAsO_2$ and $HgCl_2$.

Key words Wansheng Huasheng Dan realgar cinnabar arsenite mercuric chloride acute toxicity

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通讯作者 石京山 shijs@zmc.edu.cn