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论著

姜黄素改善丝裂霉素C导致的肾功能损伤

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摘要 **目的** 探讨姜黄素对丝裂霉素C（MMC）导致的肾功能损伤的影响及作用机制。**方法** 制备人乳腺癌异种移植瘤裸鼠模型，2周后分别ip给予姜黄素100 mg·kg^{-1}，隔天1次，MMC 1，1.5和2 mg·kg^{-1}，隔5 d 1次；姜黄素+MMC组各药的剂量与频率与单独用药一致，实验持续4周。观察动物体质量和存活率，测定瘤质量；采用液质联用仪检测药物在肾组织中的分布，测定血清肌酐（Cre）及血清尿素氮（BUN）含量。**结果** 与正常对照组比，姜黄素 100 mg·kg^{-1}与MMC 1，1.5和2 mg·kg^{-1}联合用药组的实验动物食欲正常、无明显差异，且动物无死亡；单用MMC 1.5 和2 mg·kg^{-1}组动物存活率分别为4/8和7/8。与模型对照组相比，姜黄素联合MMC 1，1.5和2 mg·kg^{-1}组肿瘤质量分别减少了40.9%，86.5%和82.7%，有显著性差异（P<0.05）。与单用MMC相比，姜黄素联合MMC 1.5和2 mg·kg^{-1}用药后，Cre分别降低了25%和43%， BUN分别降低了41%和34%；肾组织中MMC药物含量分别减少了88%（P<0.01）和84%（P<0.01）。**结论** 姜黄素可以减少MMC抑制肿瘤的用药量，并通过减少MMC在肾的分布，减轻其肾功能损伤。

关键词 姜黄素 丝裂霉素C 肾功能 药物分布

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Curcumin improves mitomycin C induced impairment of renal function

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Abstract

OBJECTIVE To explore the mechanism of curcumin(Cur) improving mitomycin C (MMC) induced renal injury. **METHODS** MCF-7 breast cancer xenografts were set up on BALB/c nude mice. Cur 100 mg·kg^{-1} was ip given once a day, while MMC 1, 1.5 and 2 mg·kg^{-1} was ip given once every 5 d. In Cur+MMC group, drug administration was at the same dosage and frequency as the single drug treatment. Body mass, the survival number and tumor mass were observed. The drug distribution in kidneys were detected by high performance liquid chromatography-mass spectrometry. Serum creatinine(Cre) and blood urea nitrogen (BUN) were determined. **RESULTS** The combination treatment of Cur and MMC resulted in eusitia of mice. No mice died in any group. However, the survival number of mice was 4/8 and 7/8 in MMC 1.5 and 2 mg·kg^{-1} alone groups, respectively. The impairment of renal function was induced by MMC 1.5 and 2 mg·kg^{-1}. Compared with MMC group, serum Cre and BUN were reduced by 41% and 34% in Cur 100 mg·kg^{-1} combined with MMC 1.5 and 2 mg·kg^{-1} groups, respectively. Compared with MMC 1.5 and 2 mg·kg^{-1} groups, MMC distribution in kidneys in Cur+MMC 1 and 2.5 mg·kg^{-1} groups were reduced by 88% (P<0.01) and 84% (P<0.01), respectively. **CONCLUSION** Cur can reduce the dosage of MMC in breast cancer and improve MMC-induced impairment of renal function by reducing the distribution of MMC in kidneys.

Key words curcumin mitomycin C renal function drug-distribution

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