中国药理学与毒理学杂志 2001 15 (3): 169-171 ISSN: 1000-3002 CN: 11-1115/R

论著

吡咯野百合碱对培养的肺及主动脉内皮细胞形态, 数量及一氧化氮产生的影响

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收稿日期 2000-6-16 修回日期 网络版发布日期 2009-2-25 接受日期 2001-1-11

摘要 吡咯野百合碱（MCTP）注射是建立肺动脉高压病理模型的常用方法，但机理不清. 实验采用细胞培养方法和DAF-2荧光法观察了MCTP对培养的牛肺动脉内皮细胞(CPAE）形态，数量及NO产生的影响, 以探讨MCTP导致肺动脉高压的机理. 结果表明：MCTP（1 μmol·L^{-1}）使培养的CPAE表面积增大〔从（46±4）$μm^2$增加到（223±27）$μm^2$〕；细胞数量减少〔从（175±9）×10^6 L^{-1}减少到（49±6）×10^6 L^{-1}〕；在CPAE和牛主动脉内皮细胞，MCTP还可抑制由ACh所致的NO生成〔分别从（16.1±1.3）%减少到(1.5±1.1)%和从（14.2±1.6）%减少到（1.4±1.6）%〕. 提示MCTP可通过损伤CPAE，减少NO的生成而导致肺动脉高压.

关键词 野百合碱 一氧化氮 肌, 平滑, 血管 细胞, 内皮 细胞, 培养的

分类号 R972

Effects of monocrotaline pyrrole on morphology, number and production of nitric oxide of cultured artery endothelial cells

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Abstract

Experimental model of pulmonary hypertension has been created by exposing animals to monocrotaline pyrrole (MCTP), but the cause of pulmonary hypertension induced by MCTP is still controversial. In this study, cell culture and DAF-2 fluorescence technique were used to investigate the effects of MCTP on cell surface area, cell number and production of nitric oxide (NO) in cultured calf pulmonary artery endothelial cells (CPAE) and bovine aorta endothelial cells(BAEC). MCTP induced the cell enlargement from (46±4) to (223±27)$μm^2$ and decreased the number of cells from (175±9)×10^6 L^{-1} to (49±6)×10^6 L^{-1} in CPAE. Acetylcholine induced production of NO, measured by DAF-2, was decreased significantly from (16.1±1.3)% to (1.5±1.1)% and from （14.2±1.6）% to（1.4±1.6）% in CPAE and BAEC, respectively. The results indicate that MCTP may damage endothelial cells and inhibit NO production, which maybe another pathogenesis of MCTP induced pulmonary hypertension.

Key words monocrotaline nitric oxide muscle smooth vascular cells endothelial cells cultured

DOI:

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