山东大学学报(医学版) 2010, 48(6) 31-35 DOI: ISSN: 1671-7554 CN: 37-1390/R

论文

5-氨基乙酰丙酸光动力疗法诱导人宫颈癌细胞株Hela和Siha凋亡的研究

王海燕，张友忠，姜侃，焦慧，王兆婧

山东大学齐鲁医院妇科， 济南 250012

摘要：

目的 探讨5-氨基乙酰丙酸结合光动力疗法对人宫颈腺癌Hela细胞株和鳞癌Siha细胞株凋亡的影响及其相关机制。方法 噻唑蓝（MMT）法检测光动力疗法对人宫颈癌细胞株Hela和Siha增殖的影响，并比较不同的抑制作用。Annexin V-FITC/PI双染法检测光动力疗法对Hela和Siha细胞株凋亡的影响。免疫细胞化学法检测光动力疗法对两种细胞Her-2/neu基因的蛋白表达影响。结果 Hela比Siha细胞株对光动力治疗更敏感。5-氨基乙酰丙酸2mmol/L、10J/cm2激光剂量孵育为光动力疗法体外杀伤Hela和Siha细胞株较理想的实验条件，在该条件下Hela、Siha细胞的IC50分别为0.724、1.206mmol/L。光动力疗法可显著诱导Hela和Siha细胞凋亡，并抑制Hela和Siha细胞Her-2/neu基因的蛋白表达。结论 光动力治疗在体外对人宫颈腺癌Hela细胞株和鳞癌Siha细胞株有明显的增殖抑制作用，还能诱导两种细胞发生凋亡，其机制可能与抑制Her-2/neu基因表达有关。

关键词： 5-氨基乙酰丙酸；光动力疗法；细胞凋亡；宫颈肿瘤

Effects of photodynamic therapy with 5-aminolevulinic acid on apoptosis of human cervical carcinoma Hela and Siha cells in vitro

WANG Hai yan, ZHANG You zhong, JIANG Kan, JIAO Hui, WANG Zhao jing

Department of Gynecology, Qilu Hospital of Shandong University, Jinan 250012, China

Abstract:

Objective To study effects and mechanisms of 5-ALA-PDT(5-aminolevulinic acid- photodynamic therapy) on apoptosis of cervical adenocarcinoma Hela and squamous cell carcinoma Siha cells in vitro. Methods MTT assay and Annexin Ⅴ-FITC/PI double staining assay were applied to investigate the effects of 5-ALA PDT on proliferation and apoptosis of Hela and Siha cells respectively. Effects of 5-ALA-PDT on expression of Her-2/neu in the two cell lines were detected by immunocytochemistry. Results Hela cells were more sensitive to 5-ALA-PDT than Siha cells. 2mmol/L 5-ALA and a light dose of 10J/cm2 were the optimal condition for the killing of Hela and Siha cell lines in vitro by 5-ALA-PDT, under which, the 50% inhibition concentrations (IC50) of 5-ALA-PDT for Hela and Siha cell lines were 0.724mmol/L and 1.206mmol/L respectively. 5-ALA-PDT induced apoptosis of Hela and Siha cells remarkably and inhibited expression of Her-2/neu protein in the two cell lines. Conclusion 5-ALA-PDT has the patent proliferation-inhibiting and apoptosis-promoting effects on the cervical carcinoma Hela and Siha cells in vitro. The mechanism may be related to the down-regulation of Her-2/neu expression.

Keywords: 5-Aminolevulinic acid; Photodynamic therapy; Apoptosis; Cervical neoplasms

收稿日期 2009-10-21 修回日期 网络版发布日期

DOI:

基金项目:

山东省科技攻关项目（2008GG10002052）。

通讯作者: 张友忠，教授，主要从事妇科肿瘤研究。Email：zhangyouzhong@vip.sina.com

作者简介: 王海燕（1980- ），女，硕士研究生，主要从事妇科肿瘤研究。

作者Email:

参考文献：

本刊中的类似文章