

论文

谷胱甘肽与铂类药物联用对人胃癌细胞株的影响

徐艳岩<sup>1</sup>, 于惠敏<sup>2</sup>, 姜娜<sup>3</sup>

1. 滨州医学院生物教研室, 山东 烟台 264003; 2. 齐鲁师范学院, 济南 250013;  
3. 烟台大学药学院, 山东 烟台 264005

摘要:

目的 探讨谷胱甘肽(GSH)联合奥沙利铂(L-OHP)和顺铂(CDDP)对胃腺癌细胞株SGC-7901细胞增殖与凋亡的影响。方法 按照不同给药方式,分为GSH、CDDP、L-OHP单药组,GSH+CDDP、GSH+L-OHP联用组。采用SRB法分别观察不同给药方式对SGC-7901细胞增殖的抑制作用;使用倒置显微镜、吖啶橙荧光染色观察细胞形态变化;应用流式细胞仪检测分析细胞周期的变化和细胞凋亡率。结果 GSH分别与CDDP、L-OHP联合可以明显抑制SGC 7901细胞的增殖,GSH和CDDP联用时,与CDDP单药组差异无统计学意义(P>0.05);GSH和L-OHP联用时,与L-OHP单药组差异有统计学意义(P<0.05)。经铂类单药及联合用药处理后,镜下可见癌细胞均出现凋亡的形态变化。流式细胞仪分析显示,L-OHP单药组、GSH+L-OHP联合用药组作用后,S期细胞数目减少,均出现明显的凋亡峰,两组相比,有明显差异(P<0.05)。结论 GSH不改变CDDP对肿瘤细胞的生长抑制作用,但可降低L-OHP对SGC-7901细胞增殖的影响,并降低其诱导胃癌细胞的凋亡率。

关键词: 谷胱甘肽; 顺铂; 奥沙利铂; 胃癌细胞; 细胞增殖; 细胞凋亡

Effect of glutathione combined with platinum derivative on gastric cancer cell lines in vitro

XU Yan-yan1, YU Hui-min2, JIANG Na3

1. Binzhou Medical College, Yantai 264003, Shandong, China; 2. Qilu Normal College, Jinan 250013, China;  
3. Yantai University, Yantai 264005, Shandong, China

Abstract:

Objective To explore the effect of glutathione(GSH) combined with oxaliplatin(L-OHP) and cisplatin(CDDP) on the proliferation and apoptosis of gastric carcinoma cell line SGC-7901 cells. Methods The cells in five groups were treated according to the following drug administrations: GSH, CDDP, L-OHP, GSH combined with CDDP, and GSH combined with L-OHP. Cell proliferation was evaluated by SRB assay, inverted microscope and fluorescent microscope were used to observe morphological changes, and the distribution of cell cycle and the rate of apoptosis were observed by flow cytometry respectively. Results GSH combined with L-OHP and CDDP obviously inhibited the proliferation of SGC-7901. The combination group of GSH and CDDP had no significant difference compared with the CDDP group (P>0.05), while the combination group of GSH and L-OHP had a significant difference compared with the L-OHP group (P<0.05). Whether cells were treated by single platinum derivative or by combination of GSH and platinum derivative, cancer cells showed the morphological change of apoptosis when observed microscopically. Flow cytometry analysis showed that the combination group of GSH and L-OHP and the L-OHP group had reduced number of cells in S phase and showed an apparent peak of apoptosis. However, the L-OHP group showed more obvious growth inhibition to SGC-7901 than the combination groups. Conclusion GSH dose not reduce the effect of CDDP on inhibiting the growth of SGC-7901, but it reduces the effect of L-OHP on SGC-7901 cells, and reduces the apoptosis of gastric cancer cells.

Keywords: Glutathione; Cisplatin; Oxaliplatin; Gastric cancer cell line; Cell proliferation; Apoptosis

收稿日期 2010-04-19 修回日期 网络版发布日期

DOI:

基金项目:

通讯作者:

作者简介: 徐艳岩(1962-),女,副教授,研究方向为肿瘤细胞生物学。E-mail: bzmcyxy@163.com

作者Email:

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