[1]黄静,梅家转,刘桂举,等.伐地考昔对人鼻咽癌CNE-2细胞增殖的抑制及放射增敏作用[J].第三军医大学学报,2012,34(21):2176-2180.
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伐地考昔对人鼻咽癌CNE-2细胞增殖的抑制及放射

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Title: Valdecoxib suppresses proliferation and enhances radiosensitivity in nasopharyngeal carcinoma cell line CNE-2

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关键词: 伐地考昔; CNE-2细胞; PI3K/Akt; COX-2; 抑制作用; 放射增敏

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摘要: 目的 探讨伐地考昔抑制人鼻咽癌CNE-2细胞增殖和增强其放射增敏的作用。 方法 根据实验设计的处理情况将CNE-2细胞分为6组：对照组（DMSO）、顺铂组（50 μmol/L）、伐地考昔组（50 μmol/L）、伐地考昔+顺铂组（50 μmol/L 伐地考昔+50 μmol/L顺铂）、Wortmannin组（1 μmol/L）和伐地考昔+ Wortmannin组（50 μmol/L 伐地考昔+1 μmol/L Wortmannin）（n=8）。采用MTT法检测CNE-2细胞的生长情况；Hoechst法检测细胞凋亡指数；流式细胞仪检测细胞周期；平板集落形成实验检测放射增敏效应；Western blot检测COX-2、Akt、p-Akt(Ser473)、NAG-1蛋白水平。 结果 ①单纯50 μmol/L伐地考昔处理可升高CNE-2细胞的增殖抑制率和凋亡指数、增强细胞的放射增敏，导致细胞G_0/G_1期增加、S期降低，COX-2、p-Akt、p-Akt/Akt降低，NAG-1蛋白水平上升，与对照组相比差异有统计学意义（P<0.05）；②与 50 μmol/L 顺铂或1 μmol/L Wortmannin（PI3K抑制剂）联合使用可增强其影响细胞周期、增殖抑制及放射增敏作用（P<0.05），且细胞G_2/M期也降低；③50 μmol/L顺铂处理不影响COX-2蛋白、Akt、p-Akt(Ser473)、NAG-1蛋白水平，与伐地考昔联用不影响伐地考昔对以上蛋白水平的改变（P>0.05）；④1 μmol/L Wortmannin可降低p-Akt、p-Akt/Akt，升高NAG-1水平，与伐地考昔联用可增强伐地考昔对p-Akt、p-Akt/Akt、NAG-1的改变作用。 结论 伐地考昔可能通过降低COX-2和PI3K/Akt/NAG-1来抑制人鼻咽癌CNE-2细胞的增殖、促进其凋亡及放射增敏。

Abstract: Objective To determine the effect of valdecoxib on the growth inhibition and radiosensitivity enhancement of nasopharyngeal carcinoma cell line CNE-2.

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Methods CNE-2 cells were divided into 6 groups, according to different treatment, such as control group (DMSO), cisplatin group (50 μmol/L), valdecoxib group (50 μmol/L), valdecoxib+cisplatin Group (both 50 μmol/L), wortmannin group (1 μmol/L) and valdecoxib+wortmannin group (50 μmol/L valdecoxib+1 μmol/L wortmannin). MTT assay was employed to test the cell growth. Hoechst method was used to test apoptosis index and flow cytometry was applied to measure cell cycle. Tablet colony formation test was used to detect radiation sensitizing effect. Western blot analysis was used to detect COX-2 protein, Akt and p-Akt (Ser473), and NAG-1 protein. Results Valdecoxib of 50 μmol/L resulted in increased proliferation inhibition and apoptotic index, elevated radiosensitization, increased cells at G_0/G_1 phase and S phase, reduced protein levels of COX-2, p-Akt, p-Akt/Akt and raised level of NAG-1 (P<0.05 *vs* control group). Combination with 50 μmol/L cisplatin or 1 μmol/L of wortmannin (PI3K inhibitor) enhanced the effect of valdecoxib on cell cycle, proliferation inhibition and radiosensitization (P<0.05) as well as in reducing cells at G_2/M phase. Cisplatin of 50 μmol/L had no effect on COX-2, Akt, p-Akt (Ser473) and NAG-1 protein levels, while combination with cisplatin did not change the effect of valdecoxib on the above proteins (P>0.05). Wortmannin of 1 μmol/L reduced p-Akt and p-Akt/Akt, and elevated NAG-1 level, and combination with valdecoxib enhanced the effect of valdecoxib on the above proteins (P<0.05). Conclusion Valdecoxib inhibits the proliferation of CNE-2 cells, promotes apoptosis and radiosensitization in possible mechanism of reducing COX-2 and PI3K /Akt/NAG-1.

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