Efeito da cheleritrine no câncer de pulmão não responsivo à cisplatina – apoptose

[Effects of protein kinase C inhibitor,chelerythrine chloride,on drug-sensitivity of NSCLC cell lines].

[Article in Chinese]
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Abstract

BACKGROUND:

Protein kinase C(PKC) is a potentially important target for can-cer therapeutics due to its potential role in carcinogenesis.Abnormal expression and increasing activity of PKC-α are present in non-small cell lung cancer(NSCLC).PKC inhibitor can show anti-tumor effects through inducing tumor cell apoptosis,enhancing cytotoxic effects and down-regulating expressions of multidrug resistance gene.By observing the effects of PKC inhibitor chelerythrine chloride(CH) on drug-sensitivity to cisplatin of four NSCLC cell lines its mechanism of effect initially is explored.

METHODS:

NSCLC cell lines(H1299,H460,A549 and cisplatin-resistant A549) were dealed with PKC inhibitor CH respectively.The expressions of PKC-α mRNA and protein in NSCLC cell lines were examined by reverse transcription polymerase chain reaction(RT-PCR) and Western blot.The apoptosis rates of NSCLC cells lines were detected by flow cytometry.The drug-sensitivity to cisplatin of NSCLC cells lines was measured by methabenzthiazuron(MTT) assay.

RESULTS:

The expression levels of PKC-α mRNA and protein in cisplatin-resistant A549 cell lines were significantly higher than H1299,H460 and parent A549 cell lines($P < 0.05$).The expression levels of PKC-α mRNA and protein in four NSCLC cell lines decreased at different extent.The apoptosis rates of cisplatin-resistant A549 cell lines increased obviously after treating with CH for 4 and 24 hours,but it was not seen in H1299,H460 and parent A549 cell lines.The IC50 value of cisplatin of NSCLC cell lines decreased at different degree after treating with CH and it was more obvious in cisplatin-resistant A549 cell lines($P < 0.05$).

CONCLUSIONS:

High expressions of PKC-α mRNA and protein exist in all four NSCLC cell lines.PKC inhibitor CH can enhance the drug-sensitivity of NSCLC cell lines to cisplatin by inhibiting their expression of PKC-α mRNA and protein.When compared with parent A549 cell lines,cisplatin-resistant A549 cell line's drug-sensitivity to cisplatin is increasing more efficiently by PKC inhibitor CH through inhibition of PKC-α protein's expression and elevation of tumor cell apoptosis rates.

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