Ácido betulínico no câncer de pâncreas: diminui a proliferação, migração, inibe ciclo celular e aumenta a apoptose

[Influence of betulinic acid on proliferation, migration, cell cycle and apoptosis of pancreatic cancer cells].

[Article in Chinese]


Source

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Abstract

OBJECTIVE:

To investigate the effect of betulinic acid (BA) on the proliferation, migration, apoptosis and cell cycle of pancreatic cancer cells (BxPC-3) in vitro and elucidate the underlying.

METHOD:

The effect of BA on the proliferation of BxPC-3 was measured by using sulforhodamine B (SRB) assay. Migratory ability of BxPC3 cells were detected by wound healing assay, and the morphological change was observed with light microscope. The influence of BA on cell cycle of BxPC-3 cells was tested by flow cytometry (FCM). Apoptosis was analyzed by using Hochest33342-PI double staining. Western blot technologies were applied to detect the expression of Bcl-2 and Bax.

RESULT:

BA exhibited significant cell proliferation and migration inhibition, as well as its potency of inducing apoptosis in BxPC-3 cells in vitro in a dose-dependent manner. The IC50 value for 72 h was 16.54 mg x L(-1). Cell migration was significantly inhibited at 5 mg x L(-1) of BA. Cells treated with BA showed
increased cell population in G0 phase, with decreased G2/M phase population. The expression of Bax and Bcl-2 was up and down-regulated respectively in BA-treated BxPC-3 cells in a dose-dependent manner.

**CONCLUSION:**

BA exerted potent effect on growth inhibition, G0 cell cycle arrest and induction of apoptosis in BxPC-3 cells in vitro, possibly associated with the down-regulation of Bcl-2 and up-regulation of Bax expression. The potent antitumor capacity of BA suggested that it could be a promising new anticancer agent in human pancreatic cancer treatment.

PMID:

21355282