

عنوان مقاله:

The apoptotic effects of progesterone and testosterone on colon cancer (SW۴۸۰) cells

محل انتشار:

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خلاصه مقاله:

Association of sex steroids with cancer cells proliferation has been reported in recent studies; however, the findings are still controversial. The present study aimed to determine the cytotoxic effects of progesterone and testosterone on colon cancer (SW۴۸۰) cell and to evaluate the expression level of Bcl-۲ and Bax genes in SW۴۸۰ cell. SW۴۸۰ cell line was divided into a control group (untreated) and groups treated with ۱۲۵, ۲۵۰, ۵۰۰, and ۱۰۰۰ µg/mL of testosterone and progesterone. Cell viability was quantified by MTT assay. qRT-PCR was performed to evaluate genes expression level. Flow cytometry was used to assess the apoptosis in cancer cells. Data were analyzed using student's t-test and ANOVA. The expression level of Bax gene significantly decreased in SW۴۸۰ cells exposed to a cytotoxic dose of progesterone. Moreover, the expression level of Bax gene significantly increased in the SW۴۸۰ cells exposed to a cytotoxic dose of testosterone. The results of the present study showed that testosterone might affect the apoptosis of colon cancer cells at low concentrations. Studies have shown that progesterone can induce tumor cell death in cancer cells. Accordingly, the clinical use of testosterone and progesterone therapy for cancer treatment is highly controversial. Association of sex steroids with cancer cells proliferation has been reported in recent studies; however, the findings are still controversial. The present study aimed to determine the cytotoxic effects of progesterone and testosterone on colon cancer (SW۴۸۰) cell and to evaluate the expression level of Bcl-۲ and Bax genes in SW۴۸۰ cell. SW۴۸۰ cell line was divided into a control group (untreated) and groups treated with ۱۲۵, ۲۵۰, ۵۰۰, and ۱۰۰۰ µg/mL of testosterone and progesterone. Cell viability was quantified by MTT assay. qRT-PCR was performed to evaluate genes expression level. Flow cytometry was used to assess the apoptosis in cancer cells. Data were analyzed using student's t-test and ANOVA. The expression level of Bax gene significantly decreased in SW۴۸۰ cells exposed to a cytotoxic dose of progesterone. Moreover, the expression level of Bax gene significantly increased in the SW۴۸۰ cells exposed to a cytotoxic dose of testosterone. The results of the present study showed that testosterone might affect the apoptosis of colon cancer cells at low concentrations. Studies have shown that progesterone can induce tumor cell death in cancer cells. Accordingly, the clinical use of testosterone and progesterone therapy for cancer treatment is highly controversial

کلمات کلیدی:

Progesterone, Testosterone, SW۴۸۰, Apoptosis

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