

عنوان مقاله:

The Effect of Metformin on the Expression of Caspase ۳, ۸, ۹ and PARP-۱ in Human Breast Cancer Cell Line T۴YD

محل انتشار:

مجله بین المللی مطالعات سلامت, دوره 2, شماره 2 (سال: 1395)

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خلاصه مقاله:

Background: Metformin is used to lower blood sugar in patients with type II diabetes. Recent research showed that metformin has effects on cancer cell growth. Studies show that metformin can induce apoptosis in certain cancer cell lines. In this study, we examined the effect of metformin on apoptosis in the T۴YD breast cancer cell line. Methods: The T۴YD breast cancer cell line was selected and purchased from the Pasteur Institute (Tehran, Iran). Cells were treated with doses of ۵, ۱۰, and ۵۰ μ M of metformin at ۲۴, ۴۸, and ۷۲ hours. The transcription levels of genes involved in apoptosis, including caspase-۳, -۸, -۹, and PARP-۱, were evaluated by real-time PCR. Results: The results of this study showed that at all three doses (۵, ۱۰, and ۵۰ μ M) of metformin and at three times (۲۴, ۴۸, and ۷۲ h), the expression of caspase-۸ and caspase-۹ were increased. Also, at all doses metformin increased the expression of PARP-۱ at ۴۸ and ۷۲ hours, but at ۲۴ hours the expression of PARP-۱ was not affected. Conclusions: These results indicate that metformin does not affect expression of caspase-۳ at any dose or time point. This study showed that metformin, by increasing the transcription of caspase-۸ and caspase-۹, causes cell death through apoptosis.

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کلمات کلیدی:

Breast cancer, Metformin, Apoptosis

