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The Application of Electromagnetic Fields in Cancer

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Abstract

The use of nonionizing electromagnetic fields (EMFs) has attracted interest in cancer research during the past few decades due to its noninvasive therapeutic successes in the treatment of cancer. Some epidemiological studies suggest that there may be a link between exposure to EMF and developing malignancies (such as leukemia and gliomas) or neurodegenerative diseases since EMF has a variety of biological effects such as altering reactive oxygen species (ROS)-regulated pathways. EMF exposure, however, has the potential to cause cancer cells to undergo a period of regulated cell death. Therefore, it is important to thoroughly investigate how EMF might influence cellular processes such as proliferation, differentiation, and apoptosis - processes that are targeted in cancer treatment. In this chapter, we give a thorough summary of the most recent studies on the potential use of various EMF applications with adjustable settings to treat different forms of cancer.

Keywords: Cancer therapy; Electromagnetic field; Reactive oxygen species.

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