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THERAPEUTIC ELECTROMAGNETIC FIELD EFFECTS ON ANGIOGENESIS DURING TUMOR GROWTH: A PILOT STUDY IN MICE

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Abstract:

A controlled pilot study was performed to examine the possibility of finding a specific electromagnetic field signal to inhibit angiogenesis during tumor growth. A 120 Hz pulsating magnetic field of 4 and 5 mT was applied to female mice which had been inoculated with murine 16/C mammary adenocarcinoma. After 11 consecutive sessions of 10 min/day exposure to the magnetic field, the animals were sacrificed and an immunohistochemistry analysis of the tumors was performed. CD31 staining indicated that both magnetic fields significantly reduced the vasculature in the tumors: 39% at 4 mT magnetic flux density and 53% at 5 mT. The positive implications for impeding tumor growth and metastasis warrant further studies.

Keywords:

Angiogenesis, Cancer, Electromagnetic fields, Magnetic fields

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