Abstracts

Inhibition of Tumor Growth in Mice by Microwave Hyperthermia, Polyriboinosinic-Polyribocytidylic, and Mouse Interferon

S. Szmigielski, M. Bielec, M. Janiak, M. Kobus, M. Luczak and E. De Clercq. "Inhibition of Tumor Growth in Mice by Microwave Hyperthermia, Polyriboinosinic-Polyribocytidylic, and Mouse Interferon." 1978 Transactions on Microwave Theory and Techniques 26.8 (Aug. 1978 [T-MTT] (Special Issue on Microwaves in Medicine, with Accent on the Application of Electromagnetics to Cancer Treatment)): 520-522.

Mice bearing sarcoma 180 tumors were irradiated by 3000-MHz microwave at a power density of 40 mW/cm² for 2 h daily during 14 consecutive days. The irradiation resulted in an increase of rectal temperature of 3-4°C. Hyperthermal treatment was started on the second day after tumor-cell transplantation. Some of the animals also received daily injections of polyhiboinosinic acid-polyribocytidylecacid (poly I-poly C), 2 mu g/g, or of mouse interferon (100 IU/g), or of both. Survival of the animals, mass of the tumors, incorporation of tritiated thymidine, uridime and glycine into the tumor tissue, and intracellular levels of cyclic AMP were determined. Microwave hyperthermia resulted in a prolongation of the survival of tumor-bearing mice, a regression of tumors in 12 out of 24 mice, and a decreased incorporation of thymidine and glycine. The inhibitory effect of microwave hyperthermia was enhanced by simultaneous treatment with poly I-poly C and mouse interferon. Combination of microwave hyperthermia and poly I-poly C and interferon treatment resulted in a regression of sarcoma 180 tumors in 16 out of 24 animals. No tumor regression was observed in the control group.

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