

Abstracts

Clinical RF Hyperthermia by Magnetic-Loop Induction: A New Approach to Human Cancer Therapy

F.K. Storm, R.S. Elliott, W.H. Harrison and D.L. Morton. "Clinical RF Hyperthermia by Magnetic-Loop Induction: A New Approach to Human Cancer Therapy." 1982 Transactions on Microwave Theory and Techniques 30.8 (Aug. 1982 [T-MTT]): 1149-1158.

There has been mounting laboratory evidence that temperatures of $\geq 42^{\circ}\text{C}$ (108°F) are tumoricidal in tumor cell cultures and animal models. Localized heat by electromagnetic waves appears to be the most practical means for producing hyperthermia and has been shown to be potentially effective against human surface tumors. However, attempts to treat deep internal human cancers with available techniques have been either ineffective or dangerous because of injury to surface tissue. A fundamentally new approach magnetrode magnetic-loop induction hyperthermia, which was cooperatively developed by electrical engineers and oncologists for the treatment of deep-seated human tumors, is the subject of this report. The concept, rationale, design, and performance of this applicator in phantoms, animals, and humans is presented, as are the early results of clinical cancer trials. The data suggest reason for enthusiasm for the future treatment of advanced human tumors.

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