

# Abstracts

## Increase in X-Ray Sensitivity of Cancer After Exposure to 434 MHz Electromagnetic Radiation

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J.A.G. Holt. "Increase in X-Ray Sensitivity of Cancer After Exposure to 434 MHz Electromagnetic Radiation." 1977 MTT-S International Microwave Symposium Digest 77.1 (1977 [MWSYM]): 259-262.

The proportion of cancer cells killed by using H-wave polarised 434 MHz electromagnetic radiation applied fifteen minutes before low doses (50 to 80 rads) of X-radiation (140, 220, 330 KV, 4 MeV and Co<sup>60</sup> sources) is between three and over one hundred times better than X-radiation alone. This increased sensitivity to X-radiation varies with the cancer's site, with the physical features of host and cancer, with the cancer growth rate, with the 434 MHz dose delivered and absorbed, with the normothermic X-radiation sensitivity and other as yet unknown factors. Fifty-two patients with E.N.T. cancer treated by combined therapy and compared with similar retrospective series treated in air at normothermic levels and a series treated under three atmospheres hyperbaric oxygenation, show primary clearances rates of 81%, 32% and 61% respectively. Longer survival is correspondingly improved. The increased radiation sensitivity is partly thermal but chiefly nonthermal in origin. Temperature measurements reveal a maximum differential rise of over 3.0/spl deg/C. in large avascular cancers. X-radiation sensitivity of some cancers after 434 MHz radiation remains enhanced for approximately thirty minutes even when the cancer is cooled to pre 434 MHz temperature. A second period of increased X-radiation sensitivity appears to exist between approximately twenty and thirty hours after 434 MHz radiation.

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