

ESVONC Annual Congress

Abstract Submission Form

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Submission deadline 31st January 2009 by email to mb673@cam.ac.uk

preferred publication: oral presentation

Abstract Title: Oncothermia –theory and biophysical principles

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Objective: Hyperthermia (HT), despite its long history, could not be accepted in oncology, because of its many controversial results and pure control. Problem was missing technique of the selective deep heating, making various side- and contra effects. Our aim is to present a new technique, oncothermia (OT), which could solve many acute problems with modern facilities.

Material and Methods: OT is capacitive coupled heating, using the constrained conductive 13.56 MHz radiofrequency (RF). The time-fractal modulated RF-current flows through the patient's body between two electrodes. Due to the higher metabolic rate of the malignant cells their ionic activity is larger; in consequence the conductance of the volume is also higher.

Results: The above electronic solution could produce definite difference by the heating of the extra- and intracellular electrolyte. It constrains heat-flow through the membrane, modifying its stability and all the reaction in which it is involved. The conductance differences automatically selects between the cells. The thermal- and electric-gradients, (non-equilibrium condition) govern numerous effects, like the higher membrane permeability, larger intracellular pressure, imbalance of the ion-exchange, change of adherent connections, induce apoptotic signals, helps the expression HSP70 on the cell-membrane, etc. These biophysical effects could lead to intensive distortion of malignant tissue. The method could be combined with any other oncotherapies. It has very few side-effects and rare contraindications.

Conclusion: OT is scientifically based therapy, applied in the human oncology practice. OT is feasible to go over the difficulties of the selective deep-heating, and could be a candidate of modern veterinary oncology.

General Member

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