

Hyperthermia in cancer therapy

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Data concerning the cytocidal action of hyperthermia are unequivocal. Activation energy, values for hyperthermic cell killing suggest that the effect of hyperthermia on cell survival as well as the hyperthermic enhancement of the effect of radiation are due to protein denaturation. Recently, the hyperthermic cell killing is often interpreted in terms of membrane damage. Hyperthermic enhancement of cell radiation sensitivity seems to involve inhibition of repair of sublethal and potentially lethal damages by denaturation of DNA repair enzymes or changes in the structure of chromatin. Hyperthermia increases the radiation sensitivity of relatively radioresistant hypoxic tumor cells and diminishes cell-cycle dependent differences in radiation sensitivity.