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Radiofrequency hyperthermia for lung tumours

FOLLOW UP OF INOPERABLE LUNG'S TUMOURS WITH RADIO FREQUENCY THERAPY.

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ABSTRACT

We have treated with radiofrequency hyperthermia 10 patients affected from advanced, inoperable lung's tumours not responsive to traditional treatments or in conditions in which was not possible make any effective other therapy for haematologic, cardiac and general problems. We have obtained very interesting survival rates: 80% after a follow up 25 months.

In all the patients treated with radiofrequency hyperthermia has been also observed an improvement of respiratory and cardiovascular functions and of quality of life.

Keywords: radiofrequency, thermotherapy, lung tumours.

INTRODUNTION

In the last few years, hyperthermia has been used, successfully, in the treatment of advanced cancers alone or combined with radio or chemotherapy. The benefit of this association is based on the fact that thermotherapy doesn't cause immunodepression and, on the other hand, we have the possibility to use low doses of radiations and antitlastic agents, reporting positive results in local tumor control and general conditions, with the improvement of quality or life and survival rate of the patients.

METHODS

The Authors present their first experience about treatment of inoperable lung cancers with 13.56 MHz radiofrequency hyperthermia. They have used the Le Veen apparatus (Le Veen, 1982), obtaining temperatures of 42-45°C in deep cancers too. The treatment has been performed for 2 hours 3 times a week, and, eventually,

was repeated after 2 months considering the tumor response and the general status of the patient. They have selected 10 patients, 6 males and 4 females, with a medium age of 68 years. All the patients have been tested before the hyperthermia treatment with clinical, cito-histological, X rays and computerized tomography evaluations.

Histology was so represented: 5 squamous cells carcinoma 3 small cells carcinoma 2 large cells carcinoma. Six patients have been treated before with chemo and radiotherapy, with no response. Hyperthermia has been combined with low doses of antineoplastic agents in eight patients, after the amelioration of general conditions and haematological findings. The efficacy of the treatment has been evaluated considering the amelioration of local and general symptomatology and the dimension of the neoplastic mass tested with X rays and CT. The tumor response was graded as complete response (CR), partial response (PR), tumor stabilization (TS) and no response (NR). Complete response signified complete tumor regression; partial response indicated the tumor regression between 50% and 90% of total size; tumor stabilization signified an improvement of general conditions without a radiological response. They indicated no responsive those cases which did not show the amelioration of general status and radiological aspects.

RESULTS

TUMOR RESPONSE

	No. of cases
C R	1 (10%)
P R	2 (20%)
T S	6 (60%)
N R	1 (10%)

After a follow-up of 25 months survival rate has been of 80%. One patient died after one month because of cardiorespiratory insufficiency; one patient, with a small cells carcinoma, died after 15 months for brain metastasis, although X rays and CT had showed the reduction of the neoplastic mass evaluable in about 65%. The Authors remark the case of a patient affected from a small cells carcinoma: they have obtained a total radiological regression using hyperthermia alone, because was not possible to combine thermotherapy with any other standard antineoplastic therapy for the general conditions of the patient. In the other patients, they noticed the improvement of respiratory and cardiovascul-

ary functions with absence of pain symptomatology.

CONCLUSIONS

The Authors suggest that the first results, using the 13.56 MHz radiofrequency generator, in the treatment of advanced lung cancer, especially in those cases non responding to standard therapies, encourage the prosecution of their studies. They also remark the absolute absence of side affects, the improvement of quality of life, of survival rates and eventually, after the amelioration of haematological findings, the possibility to combine hyperthermia with low doses of chemo-radiotherapy.

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