

EXPERIENCE AND RESULTS WITH RADIOFREQUENCY HYPERTHERMIA: APPROACH IN GLIOBLASTOMA

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Recent studies have shown radiofrequency clinical hyperthermia to have anticancer effects, in particular in the case of brain neoplasias. In recent years interest in hyperthermia has grown in that it has been demonstrated that the drugs normally used in anticancer therapy may have greater efficacy at equal dosages, or preserve the same efficacy at lower dosages, when administered in combination with hyperthermia techniques.

In this paper we present our experience in a group of patients with glioblastoma treated with Radiofrequency Hyperthermia (RH). The trial was carried out on 16 patients between January 2001 and February 2007 (10 males, 6 females, mean age 45) affected by glioblastoma. All 16 patients underwent radiotherapy and chemotherapy and 1 was treated exclusively with radiotherapy. The criteria for inclusion in the trial was: inoperable cancer and patients already treated with chemo and radiotherapy at the highest doses tolerated, with life expectancy of 12 months or less.

We used an RH equipment at 13.56 MHz endowed with liquid-cooled flexible antennas, positioned bilaterally on the temples. Treatment was based on an average of three cycles, each consisting of eight 45-minute sessions every other day, using about 85-95 W per session, and administering, at the same time, 250 cc of mannitol followed by 20 mg of furosemide i. v. to prevent the formation of oedemas.

There were no side effects. The results were assessed not only through MR and CT, but also by means of a clinical examination carried out by our neurologist before and after treatment.

At the end of treatment, considerable improvement in the neurological symptoms was found in 9 patients. In another 3 patients improvements were observed even if they were not as outstanding, and in 2 cases became stabilised. In the remaining 2 cases the symptoms did not improve significantly. Mean survival in these patients was 17,31 months, median was 15 months with D.S. 6,52. 5 patients were alive at 18th month (29%) and 3 patients were alive at 24th month (18%).

The results obtained in this group of patients, albeit small in number seem to confirm the positive effect of hyperthermia in controlling tumor growth, in increasing survival and above all in improving the neurological symptoms and the general conditions. Finally, notably the total absence of side effects and good tolerance of treatment afforded by the instruments used, which contributed to increasing heat delivery time without causing discomfort to these delicate and difficult patients.