ONCOTHERMIA: AN EFFECTIVE TREATMENT FOR ADVANCED GLIOMAS

Sahinbas H*, Grönemeyer D.H.W.
University of Witten/Herdecke, Bochum, Germany

Introduction: Contrary to the enormous efforts, results of conventional treatments of high-grade malignant gliomas are unsatisfactory. The prognosis of that tumour type is poor, its overall median survival time (MST) less than a year \(^{[1,2,5,6,8]}\). Most of the cases are inoperable or only partially resectable, and their response to the various chemotherapies and/or radiotherapy is poor. The chemo-therapies which are successful for other locations often fail due to the effective brain-blood barrier (BBB) \(^{(9)}\). Probably the modification of the BBB by electromagnetic fields together with the direct electromagnetic-field heating\(^{(12)}\) are the main factors for the success of electro-hyperthermia.

Objectives: Primary aim of this study was to present the therapy tolerance for patients of electro-hyperthermia (EHY) for advanced malignant gliomas and as main intention to show the increase of the median survival time (MST).

Methods & Patients: Our study was performed between 2000 - 2004; for patients with inoperable, partially resected or recurrent gliomas (WHO grade III and IV) with progression after radio- and/or chemotherapy and a Karnofsky Performance Score ≤30-40%.

105 pts were involved in this study: 38 astrocytoma pts, 56 glioblastoma pts and 12 pts with other brain malignances.. All patients were heavily and unsatisfactory pretreated. EHY was applied over 4 weeks, 3 time a week over 1 hour in average by 100Watt, as mono- or combined therapy (chemotherapy, irradiation therapy) \(^{(5,6,7,10,11)}\). The set of patients as well as the frequency of EHY was well documented for future evaluations.

Results: The historic reference of the MST from the first diagnosis for gliomas grade III and IV in our Institute is 11.42 months (range 1-62), which is in good agreement with the relevant literature \(^{(1,2,5,6,8)}\).

The median survival time (MST) \(^{(12,13)}\) in our Institut with EHY increases to 44.2m, 23.2m and 61.0m for astrocytoma, glioblastoma and other brain malignancie s, respectively. The therapy results were controlled by MRI images.

Summary and Conclusions: EHY is a feasible treatment for advanced inoperable malignant brain tumors. In a few cases partial remission and/or significant retardation of tumor growth was shown, the survival MST was considerable increased for patients treated with hyperthermia as adjuvant therapy. The applied hyperthermia-treatment was well tolerated by the patients even in advanced tumor stages.

Literatur:

6.  E.D. Hager et al: Response and survival of patients with gliomas grade III/IV treated with RF capacitive-coupled hyperthermia, ICHO Congress, St. Louis USA 2004


