Conclusion: Chemotherapy given after postoperative radiotherapy in patients with oligodendroglioma did not improve survival in this retrospective study.

520 PUBLICATION

Analysis of prognostic factors in patients with glioblastoma multiforme treated with postoperative radiotherapy

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Purpose: To evaluate prognostic factors of patients with Glioblastoma multiforme (GBM) treated with postoperative radiotherapy (RT).
Materials and methods: Between October 1995 and December 2003, 80 patients with newly diagnosed GBM were treated with postoperative RT at our department. Patients were assigned to RPA groups. We also evaluated several potential prognostic factors for survival. The influence of various factors of age, sex, Karnofsky performance status (KPS), histology, a history of seizure at diagnosis, type of surgery, RT dose, median waiting time from operation to RT, median duration of RT, duration of symptoms, presence of chemotherapy, initial tumor size, postoperative tumor size, neurologic status of preoperative, postoperative and after RT, family history of cancer and RPA groups on overall survival were studied. The Kaplan-Meier method, Log-rank test and the Cox proportional hazard model were used for statistical analysis.
Results: All patients evaluated in April 2005. Median follow-up was 8 months (1–37 months) and 89 patients died at analysis time. Median age was 55 years (20–73 years) with 49 male and 31 female patients. Surgical treatment consisted of biopsy, subtotal resection and total resection of 16, 39 and 25 patients, respectively. All patients had received eksternal beam radiotherapy with a median dose of 60 Gy (22–66 Gy). In 2 cases (2.5%) the tumor was multicentric. The median waiting time from operation to RT was 20 days (1–54 days) and the median duration of RT was 42 days (15–71 days). A total of 33 patients received adjuvant or concurrent chemotherapy with RT. The overall median survival was 8 months (1–37 months) for the total group and 15, 8, 9 and 3 months for RPA group III (n = 12), IV (n = 35), V (n = 29) and VI (n = 4), respectively. The 1, 2 and 3 year overall survival rate were 31%, 5% and 2%, respectively. The following parameters were significantly associated with prolonged survival:
1. KPS of 80 or more (10 and 4 months, $P < 0.001$)
2. total tumor resection (13 and 7 months, $P < 0.001$)
3. total dose of RT (<60 Gy vs *60 Gy; 3 and 9 months, $P < 0.001$)
4. initial tumor size ($\leqslant$4 vs >4 cm; 9 and 8 months, $P < 0.001$)
5. absence of neurologic defisite after surgery (10 and 6 months, $p < 0.001$)
6. absence of neurologic defisite after RT (11 and 5 months, $p < 0.001$) and RPA groups ($p < 0.05$).

Conclusion: Glioblastoma multiforme remains an important cause of morbidity and mortality from intracranial tumors. Karnofsky performance status, total tumor resection, total dose of RT, initial tumor size, absence of neurologic defisite and RPA grops are prognostic factors for predicting survival of GBM patients.

521 PUBLICATION

Radiosensitized treatment of different brain tumors with hematoporphyrin derivative

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Background: While primary malignant brain tumors account for only 2% of all adult cancers, these neoplasms cause a high amount of cancer-related deaths. The incidence of primary brain tumors is increasing, so the emergence of novel treatment methods for these tumors has led to heightened interest. High level of porphyrins is noticed in glioma tissue, therefore sensitized gliomas treatment is hopeful. Our hypothesis was that the some of the rays who can provide ionizing radiation (x-rays and/or gamma rays) could activate some of hematoporphyrin derivatives (HpD). To prove it, we have performed experiments on mice and rats. A favourable outcome of our animal experimental study has encouraged us to utilize radiosensitized treatment (RST) in Lithuanian Oncology Center in 1989. The purpose of this work was to investigate and to enlarge the possibilities of sensitized brain tumors treatment using some HpD as radiosensitizer.
Materials and methods: Since 1998 03 the total of 89 patients with advanced primary or metastatical brain tumors underwent RST as palliation. There were 58 patients with primary malignant tumors and 27 patients with with solitary metastatic brain tumors (16 patients) or with tumors, which were grown into the brain from the surrounding tissue (11 patients). There were 4 patients with primary benign tumors too. Tumors were irradiated with gamma rays 2 Gy at a time from radioactive 60Co 24, 48 and 72 h after injection i.v. of the HpD (the full dose of the course was 6 Gy). 23 patients underwent a single course of RST, for the rest RST was repeated. CT- and /or MRI-examination was provided for all patients before the treatment and 1–1.5 mo. after each RST course.
Results: As the immediate result of RST of malignant brain tumors, 31 malignances (in 14 patients) fully disappeared. However the recurrent disease was noticed in 4 of them after 49; 37; 24 and 6 mo. The significant response – the regression of tumor and remission of the disease for more than 6 mo. – was observed in 24 patients. Partial response was noticed in 25 patients. For the rest patients the treatment was ineffective. RST was ineffective for all patients with benign brain tumors.
Conclusions: RST is a new and effective method of treatment in malignant brain tumors both primary and metastatical. The effectiveness of RST depends on the morphological type of tumor.

522 PUBLICATION

Therapeutic results in patients with anaplastic astrocytoma (AA) or glioblastoma multiforme (GBM) receiving postoperative radiotherapy and concomitant temozolomide

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Background: We retrospectively evaluate our therapeutic results in patients with anaplastic astrocytoma (AA) or glioblastoma multiforme (GBM) receiving postoperative radiotherapy and concomitant temozolomide.
Materials and method: The medical records of 32 patients treated by postoperative external beam radiotherapy (RT) and concomitant temozolomide chemotherapy at our institution were analyzed. Karnofsky performance score (KPS) was above 70 in all patients. There were 10 female and 22 male patients with a median age of 49 years (range, 21–53 years). Histopathology was GBM in 25 and AA in 7 patients. Subtotal excision was performed in 19 and gross total excision in 12 patients. Three patients were treated with an accelerated fractionation scheme (1.5 Gy bid to a total dose of 45 Gy), while 29 patients were treated with conventional scheme (2 Gy daily to a total dose of 60 Gy). Initial radiotherapy portals included primary tumor volume plus 3 cm, and boost volume included primary tumor plus 1 cm. Localization was performed after 40.5 Gy for accelerated scheme and after 40 Gy for conventional scheme. Temozolomide was given in 100 mg/m^2 doses (PO once daily, max. dose 200 mg), during the first and the third week of RT course in 17 patients. Since this dosage was well tolerated, we increased dosage to 150 mg/m^2 ((PO once daily, max. dose 300 mg)in last 15 patients. Informed consent was obtained from all patients before the start of therapy.
Results: The median follow-up was 10 months (range 3–17 months). Nineteen patients had either no evidence of disease or stabile disease, while progression was observed in 7 patients at last follow-up. Six patients died of disease. The median overall survival was 15 months (17 months for AA, and 14 months for GBM, $p = 0.06$). Patients with gross total excision had better overall survival than patients with subtotal excision (17 months vs. 13 months, $p = 0.05$) in univariate analyses. Gender, age, KPS, type of surgery, grade, and RT scheme were analyzed as prognostic factors in multivariate analysis, and no significant factor affecting the overall survival was found. Emesis was the predominant toxicity during treatment observed in 9 patients (28%). Skin toxicity due to drug reaction were seen in 2 patients. But both receied phenytoin with temozolamide. No other serious acute and late toxicity was noted due to either RT or temozolomide.
Discussion: Postoperative radiotherapy and concomitant temozolomide seems to be an effective and safe treatment regimen for patients with AA and GBM.

523 PUBLICATION

Temozolomide in the treatment of high grade gliomas

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Purpose: to present the results obtained in treatment of primary high grade gliomas with postoperative radiotherapy and chemotherapy with Temozlomide, the toxicity and the compliance to treatment.
Material and methods: We treated 61 patients between 1999–2004. The median age was 41 years (10 and 64 years old). Histology: 30 patients with glioblastoma multiforme, 23 patients with anaplastic astrocytoma and 8 patients with anaplastic oligoastrocitoma. The standard treatment was surgery followed by radiotherapy. There were 39 patients with macroscopic total resection and 22 with partial resection. Postoperative radiotherapy consisted in focal irradiation in daily fractions of 1.8–2 Gy/5 days per week