

Results. According to literature data, survival time of long-surviving patients who underwent combination therapy was most often associated with such factors as young age, good preoperative status based on Karnofsky score, macroscopically complete gross total resection (GTR) of a tumor, MGMT gene promoter methylation, or combined IDH1 mutation and MGMT gene promoter methylation.

110 patients were included in the study in total. Initially, 17 long-surviving patients were identified, but after data review by pathologists there were only 15 patients (13.6%, grade 4). In two patients, a tumor was a grade 3 anaplastic astrocytoma. Average age of long-surviving patients was 34 ± 10.6 , initial Karnofsky score was 90% (n = 12) and 70-80% (n = 3). In 2+ years, Karnofsky score was 90% (n = 11) and 70-80% (n = 3). 73% (n = 11) underwent tumor GTR and 27% (n = 4) had near total resection (NTR). 100% of patients (n = 15) had radiotherapy with a linear accelerator, 80% (n = 12) of patients underwent chemotherapy with temozolomide. A 5-year survival rate in the group was 8.2% (n = 9). Median survival in the main group was 11.6 months. In patients aged 21 to 40, median survival was 21.3 months. Immunohistochemical examination was not performed for all patients, so available results were not taken into account in statistical estimations.

Patients with prolonged tumor growth, which was revealed in three cases during the follow-up, require special attention. All patients with prolonged tumor growth were operated by us repeatedly and in one case, two surgeries with intervals of 3 and 2 years were performed.

Conclusion. Favorable survival factors in long-surviving patients in our study were young age, high initial Karnofsky score, gross total resection (GTR) of a tumor, and chemotherapy with temozolomide. Individualized treatment in case of prolonged tumor growth is an additional way of increasing survival time. Immunohistochemical, molecular, and genetic studies in the future will allow for deeper long survival time factors analysis.

KEY WORDS: glioblastoma, long-surviving patient, radiological therapy, median survival, MGMT, resection extent, gross-total resection.

43. Modern approach to diffuse low grade gliomas treatment

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Background. Recent advances in neurobiology, genetics, and diagnostic imaging showed that diffuse low grade glioma (DLGG) is a progressive, invasive, and chronic central nervous system disorder rather than a brain tumor. This aggressive lesion continuously grows, extends along white matter tracts, inevitably progresses into more severe malignant tumors and, consequently, causes disability and death.

The aim of our study was to review modern conceptual approaches to DLGG treatment according to literature data.

Methods. Online literature search in PubMed for 2009–2019 inclusive was carried out using the following key words: brain gliomas, diffuse gliomas, astrocytomas, oligodendrogliomas, low grade oligoastrocytomas.

Result. It was established that nowadays, instead of "wait and see" tactics, an aggressive approach prevails, including surgical interference such as frontline therapy. This concept is actively promoted by a French scientific study group, which primarily includes Hugues Duffau and Luc Taillandier (Hospital Center, University of Montpellier, France). Key components of this approach are as follows:

1. Understanding that intraoperative mapping with maximal resection according to functional boundaries (rather than boundaries based on neuroimaging data) correlates with the highest overall survival while preserving high quality of life and minimizing complications.
2. Use of an integral concept based on forecasting of a personalized and long-term multi-stage therapeutic approach with actual adaptation of a strategy for several years with the use of clinical, radiologic, and histomolecular monitoring data.
3. New individualized treatment strategies must include interdependences between a course of this chronic disease, brain reactions mapping, and oncofunctional changes caused by multi-stage treatment methods.
4. New knowledge of brain neuroplasticity allowed to extend surgical area to functional brain regions, which were traditionally considered inoperable.

Results of application of such concept of DLGG patients treatment will be presented in a report.

Conclusion. Currently, the key approach to DLGG patients treatment is a provision of personalized, multi-modal, long-term treatment strategy with dynamical methods, which are adopted over time based on regular functional examination and radiological monitoring. Thus, the concept suggested by the authors promotes personalized, functional, and preventive treatment of such neurooncological disease.

KEY WORDS: diffuse low grade gliomas, surgery, treatment personalization, multi-stage therapeutic approach, quality of life, duration of life, survival without relapse.

44. Paraneoplastic processes in tumors of the central nervous system in children.

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Paraneoplastic syndromes are pathological manifestations due to the indirect influence of the tumor process on the metabolism, immunity and functional activity of the regulatory systems of the organism. In the practice of a neurosurgeon, acute or subacute manifestations of PNS are observed.

Every year, 60–76 patients with tumors of the nervous system receive surgical treatment at our center. PNS occurred in children with giant tumors of the PCF, mesencephalic region, and neuroblastomas of various localization.

Goals. Identify adverse predictors of PNS in children with central nervous system tumors.

Materials and methods: 74 case histories of pediatric patients with giant tumors of the PCF, midline and neuroblastomas of various localization after surgical treatment were retrospectively analyzed, from 2015 to 2019. The age of children is from 8 months to 13 years, the average age is 3–1.8 years.

Results: in the postoperative period after total (subtotal) removal of tumors of the midline of the brain, PNS developed with a frequency of 70 - 75% in patients with tumors G II - G IV.

Syndromes prevailed depending on localization:

- III ventricle – electrolyte imbalance and endocrine disorders in 37 patients 50%;