The ten best articles in the medical literature relating to brain tumors are reviewed here.


The largest epidemiological study of brain tumors, sponsored by the Central Brain Tumor Registry of the United States (CBTRUS), a sister organization of the American Brain Tumor Association (ABTA), contains significant information on the current profile of primary malignant brain tumors. The study of over 20,000 patients with brain tumors covers 18 years during which the diagnosis and treatment of brain tumors evolved rapidly. Considerable improvements in survival rates between the years of 1973 to 1980 and the more recent era of 1986 to 1991 were noted for children and adults with medulloblastoma, as well as adults with astrocytoma (nonmalignant) and oligodendroglioma. Glioblastoma multiforme continues to the most intractable brain tumors with little improvement in survival despite dramatic advances in diagnostic and surgical technology.


The switch to the malignant phenotype may be linked to the gene expression of specific oncogenes and growth factors. In animal models and *in vitro* experiments, basic fibroblast growth factor is linked with the proliferation, invasion, and angiogenesis response of malignant brain tumor cells. These data support the development of pharmacological compounds that suppress the expression or inhibit the action of these growth factors.


The increase in the incidence of primary brain tumors in the elderly over the last decade represents a serious health problem. Surgery remains the mainstay of the management of malignant gliomas, and the extent of the resection is one factor linked to the length of survival. This article reviews standard treatment modalities as well as novel approaches in clinical trials to treat newly diagnosed and recurrent glioblastomas.


The key to the optimal treatment of brain tumors will be the clear understanding of the biological origins, preventable factors, and specific control mechanisms. The puzzle of what causes brain tumors remains complex with theories linking it to environmental (eg, electromagnetic radiation), genetic, dietary, and hereditary factors. The Lebow Conference, attended by prominent scientists and clinicians, identified new avenues of research across multiple scientific disciplines.


This prospective, randomized, placebo-controlled, multicenter trial of 222 patients is noteworthy because it reports a new treatment that is safe and effective for recurrent malignant gliomas. The study was conducted under rigorous control and opens the door for further trials with more effective drugs.


This article reviews the current neurosurgical technology including MRI guidance and stereotaxy to maximize the safe removal of the brain tumor while sparing "eloquent" and vital areas of brain.


The plasma concentrations of paclitaxel in patients taking enzyme-inducing antiepileptic drugs (eg, diphenylhydantoin, carbamazepine, phenobarbital) were significantly lower than in patients not taking these antiepileptic medication. Thus, the concomitant administration of antiepileptic medication introduces an important variable in interpreting efficacy data, pharmacokinetics, and toxicity of novel agents for treatment of brain tumors.


This article provides a clear exposition of criteria for selection of suitable candidates for surgery, emphasizing that multiple or recurrent brain metastases can be successfully removed with an increase in survival and enhancement of the quality of life, often complementing other available modalities such as stereotactic radiosurgery and whole-brain irradiation.


CAI, carboxyamide-triazole, is an anticancer agent developed as an inhibitor of selected signal transduction pathways. CAI inhibits the invasive phenotype of human glioma cell lines and decreases production of the 72kDa and 92 kDa type IV collagenases, thus suggesting a potential for benefit in the treatment of high-grade astrocytomas.
This report represents a superb overview of the multimodality treatment of gliomas in an outstanding reference source for the modern approach to brain tumors.