

Anaplastic Astrocytoma: Rare Brain Tumour

Priya Pandey*

School of Biosciences and Bioengineering, Lovely Professional University, Phagwara, Punjab, India

COMMENTARY

Astrocytomas are rare type of malignant brain tumour which develops in brain cell of star shape Astrocytes Cells (which forms tissue which protects nerve cells in brain and spinal cord). Astrocytomas are of three types. Grade 1 and grade 2 Astrocytomas grow slowly and are Benign (non-cancerous and non-harmful). Grade 3 and grade 4 Astrocytomas grow faster and are Malignant (cancerous). Anaplastic astrocytoma is a grade 3 astrocytoma and occurs in Central Nervous System (CNS). Astrocytes and similar other cells form tissue which surrounds and protects nerve cells found within the brain and spinal cord. Collectively, these cells are known as glial cells. Males are at risk of getting Anaplastic Astrocytomas.

The symptoms of an anaplastic astrocytoma occur as a result of increase of pressure in the brain when tumor grows uncontrollably and affects healthy brain tissue and blocks normal flow of cerebrospinal fluid in the brain. Blockage of the fluid-filled spaces in the brain, ventricles, results in the abnormal accumulation of Cerebrospinal Fluid (CSF) in the brain. Includes: headaches, lethargy or drowsiness, nausea or vomiting, behavioral changes, seizures, memory loss, vision problems and coordination and balance problems.

It develops in the frontal, temporal, parietal and occipital lobes of the cerebrum or brain. Tumour occurred in Frontal lobe causes memory problems, changes in personality and mood, and paralysis (hemiplegia). Tumors occurred in the temporal lobe causes seizures, memory problems. Tumors in the parietal lobe causes difficulties with communication. Tumors in the occipital lobe causes visual loss.

Causes

Immune system abnormalities, exposure to UV rays and certain chemicals, having genetic disorders like type I (NF1), Li-Fraumeni syndrome.

Diagnosis

Diagnosis is made using Imaging Techniques including Computerized Tomography (CT) scanning and Magnetic Resonance Imaging (MRI).

CT scanning, computer and x-rays are used to create a film showing cross-sectional images of certain tissue structures. MRI uses a magnetic field and radio waves to produce cross-sectional images of particular organs and bodily tissues. These imaging techniques are used in evaluating size and extension of the tumor. Surgical removal and Biopsy also provide confirmation of tumour of Anaplastic Astrocytomas.

Treatments

Following are treatments used for treating Anaplastic Astrocytomas.

- Surgery: Remove most of the tumor without interfering with neighboring healthy cells
- Radiation: Treats residual (left) tumor cells after surgery or chemotherapy
- Radiotherapy techniques like Gamma Knife and IMRT targets remaining tumor cells after radiation and reduces exposure of radiation to healthy tissue.
- Chemotherapy: Treatment with help of drugs and chemicals

REFERENCES

1. Omuro A, DeAngelis LM. Glioblastoma and other Malignant Gliomas: A Clinical Review. *JAMA*. 2013;310(17):1842-1850.
2. Van Meir EG, Hadjipanayis CG, Norden AD, Shu HK, Wen PY, Olson JJ. Exciting new advances in Neuro-Oncology: The avenue to a cure for malignant glioma. *CA Cancer J Clin*. 2010;60(3):166-193.
3. Koukourakis GV, Kouloulas V, Zacharias G, Papadimitriou C, Pantelakos P, Maravelis G, et al. Temozolomide with radiation therapy in high grade brain gliomas: Pharmaceuticals considerations and efficacy; A review article. *Molecules*. 2009;14(4):1561-1577.
4. Wick W, Platten M, Weller M. New (alternative) temozolomide regimens for the treatment of glioma. *Neuro Oncol*. 2009;11(1):69-79.
5. Belda-Iniesta C, de Castro Carpeno J, Casado Saenz E. Molecular biology of malignant gliomas. *Clin Transl Oncol*. 2006;8(9):635-641.
6. Mathieu D, Fortin D. The role of chemotherapy in the treatment of Malignant Astrocytomas. *Can J Neurol Sci*. 2006;33(2):127-140.
7. Reardon DA, Rich JN, Friedman HS, Bigner DD. Recent advances in the treatment of malignant astrocytoma. *J Clin Oncol*. 2006;24(1):1253-1265.
8. Chang SM, Parney IF, Huang W. Patterns of care for adults with newly diagnosed malignant glioma. *JAMA*. 2005;293(5):557-564.

Correspondence to: Priya Pandey, School of Biosciences and Bioengineering, Lovely Professional University, Phagwara, Punjab, India; E-mail: priyapandeykp1999@gmail.com

Received: May 18, 2021; **Accepted:** May 24, 2021; **Published:** June 01, 2021

Citation: Pandey P (2021). Anaplastic Astrocytoma: Rare Brain Tumour. *J Tum Res Reports*, 6:142.

Copyright: © 2021 Pandey P. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.