Glioblastoma epidemiology

Glioblastoma (GBM) CNS World Health Organization (WHO) grade 4 is the most common, malignant intrinsic brain tumor in adult patients [1) 2) 3)].

Glioblastoma occurs in approximately 46% of gliomas [4)], with incidence increasing by 3% per year [5)].

It has an incidence rate of 3.19 per 100,000 persons in the United States and a median age of 64 years, it is uncommon in children. The incidence is 1.6 times higher in males compared to females and 2.0 times higher in Caucasians compared to Africans and Afro-Americans, with lower incidence in Asians and American Indians.

It is commonly located in the supratentorial region (frontal, temporal, parietal, and occipital lobes) and is rarely located in cerebellum [6)].

The reported median age at initial diagnosis is of approximately 65 years [7)]

Its incidence continues to increase in the elderly because the older segment of the population is growing faster than any other age group. Most clinical studies exclude elderly patients, and “standards of care” do not exist for Glioblastoma patients aged >70 years [8)].

Predominantly localized in the hemisphere, in 24% in and directly around the motor area [9)].

Spain

4000 new cases of malignant gliomas are diagnosed each year in Spain, from which more than one-third are glioblastomas [10)].

1)
Miller KD, et al. Brain and other central nervous system tumor statistics, 2021. CA Cancer J Clin. 2021 doi: 10.3322/caac.21693.
2), 7)
Ostrom QT, Cioffi G, Waite K, Kruchko C, Barnholtz-Sloan JS. CBTRUS Statistical Report: Primary Brain and Other Central Nervous System Tumors Diagnosed in the United States in 2014-2018. Neuro Oncol. 2021 Oct 5;23(12 Suppl 2):iii1-iii105. doi: 10.1093/neuonc/noab200. PMID: 34608945; PMCID: PMC8491279.
3)
Moore Kraig, Kim Lyndon. Springer Science+Business Media, LLC; 2010. Primary brain tumors: Characteristics, practical diagnostic and treatment approaches; pp. 43–75.
4)
Ostrom QT, Gittleman H, Fulop J, Liu M, Blanda R, Kromer C, Wolinsky Y, Kruchko C, Barnholtz-Sloan JS. CBTRUS Statistical Report: Primary Brain and Central Nervous System Tumors Diagnosed in the United States in 2008-2012. Neuro Oncol. 2015 Oct;17 Suppl 4:iv1-iv62. doi: 10.1093/neuonc/nov189. Epub 2015 Oct 27. PubMed PMID: 26511214; PubMed Central PMCID: PMC4623240.
5)
Monticelli M, Zeppa P, Zenga F, Altieri R, Mammi M, Bertero L, Castellano I, Cassoni P, Melcarne A, La

Rocca G, Sabatino G, Ducati A, Garbossa D. The post-surgical era of Glioblastoma: How molecular biology has impacted on our clinical management. A review. Clin Neurol Neurosurg. 2018 May 16;170:120-126. doi: 10.1016/j.clineuro.2018.05.015. [Epub ahead of print] Review. PubMed PMID: 29777944.

6) Tamimi AF, Juweid M. Epidemiology and Outcome of Glioblastoma. In: De Vleeschouwer S, editor. Glioblastoma [Internet]. Brisbane (AU): Codon Publications; 2017 Sep 27. Chapter 8. Available from http://www.ncbi.nlm.nih.gov/books/NBK470003/ PubMed PMID: 29251870.

8) Bauchet L, Zouaoui S, Darlix A, Menjot de Champfleur N, Ferreira E, Fabbro M, Kerr C, Taillandier L. Assessment and treatment relevance in elderly glioblastoma patients. Neuro Oncol. 2014 May 2. [Epub ahead of print] PubMed PMID: 24792440.

9) Saksena S, Jain R, Narang J, Scarpace L, Schultz LR, Lehman NL, Hearshen D, Patel SC, Mikkelsen T: Predicting survival in glioblastomas using diffusion tensor imaging metrics. Journal of Magnetic Resonance Imaging 32:788-759, 2010

10) Galceran J, Ameijide A, Carulla M, Mateos A, Quirós JR, Rojas D, et al. Cancer incidence in Spain, 2015. Clin Transl Oncol. 2017;16:1–27.