



# Glioma, The Road Ahead

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Glioma is the most common primary central nervous system tumor involving all age groups. In our setup where we are often triaging our patients and sorting out the wait list, glioblastoma (GBM) multiforme is categorized under “the lost battle.” Yet, occasionally we have seen the survivors of GBM refuting all the literature quoting poor survival. The recent WHO 2021 classification has brought in significant changes in the classification of gliomas and based them completely on their genetic makeup.<sup>1</sup>

Diffuse midline gliomas H3K27M altered are one such category unfortunately with limited treatment options. The review article included in this issue highlights the differences between the adult and pediatric midline glioma.<sup>2</sup> The authors have done a commendable job of reviewing 97 articles for this study. At present, research focuses on identifying the new targeted therapies, but we are miles away from any practical utility.

This issue of our journal abounds in information pertaining to glioma and the recent advances made in the field. The prospective case control study assessing the role of polymorphic XRCC7 gene as a risk factor for glioma is a the first-ever study done on the Indian population.<sup>3</sup> This is a study with small sample size (30), but it managed to show a significant prevalence of the GT and the TT genotypes in cases of glioma in middle-aged men. If we could successfully find blood markers suggesting the prognosis of the glioma patient, it will be a boon for our limited resources.

The two review articles in the current issue dealing with molecular imaging of the glial tumors and the connectomic network are also great read.<sup>4,5</sup> The fast-changing advances in neuro-oncology make it essential to keep ourselves updated. The two advances, one in the field of molecular imaging and the other in connectomic network, are such examples.

Connectomic studies have revealed large-scale brain network with structural and functional reorganization. Analyzing these networks in the preoperative setup assists in planning the approach to the tumor and deciding on the extent of tumor removal. In the current era of advanced target

therapy and radiosurgery, it is imperative that patients are functionally intact postsurgery. Soft neurological signs have often been missed and connectomics helps us look into that aspect of outcome. It will always remain debatable to choose between obvious tumor residue and preserving unseen soft signs, but in most of the cases that are planned well, we can be in an advantageous position with the information obtained from connectomics. The authors in the article on molecular imaging for glial tumors have beautifully reviewed the established and emerging positron emission tomography (PET) tracers, which have a potential clinical impact on decision-making. They are of great importance in differentiating a tumor from an infective pathology, delineating the tumor extent, and further differentiating tumor relapse from radiation changes. The authors had, in their previous study, shown a very systematic approach to a patient diagnosed and operated for grade 3 gliomas. They have shown the sensitivity and specificity of fluoroethyl-l-tyrosine PET (FET-PET) as 80% and 87.5%, respectively, which are comparable to the results shown in the meta-analysis of 13 FET-PET studies.<sup>6,7</sup> Amino acid tracers in PET/CT are now the preferred form of investigation when magnetic resonance imaging (MRI) is equivocal.

Cost is the most important limitation in adapting these practices into daily routine. Aiming for a center of excellence for neuro-oncology to provide maximum benefit to most of the patients should be the next subject of discussion. We have come a long way from just performing a biopsy for eloquent area gliomas to doing maximal safe resection. The future looks promising.

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