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EXAMINING THE CLINICAL UTILITY OF NEXT GENERATION SEQUENCING IN ADULT GLIOBLASTOMA - A SINGLE CENTER RETROSPECTIVE STUDY

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GENERATION SEQUENCING IN ADULT GLIOBLASTOMA – A
SINGLE CENTER RETROSPECTIVE STUDY

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BACKGROUND: Over the last 2 decades, the use of molecular targeted therapy has revolutionized the cancer treatment landscape and transformed the outcomes and disease prognoses of several cancer entities. The success of targeted therapy is closely tied to the advent of commercially available next generation sequencing (NGS) which has expanded our understanding and knowledge of the genetic drivers and mutations present in a variety of tumors. Unfortunately, in glioblastoma (GBM), the overall effectiveness of targeted therapies remains limited.¹ Nonetheless, NGS for GBM patients has been integrated into the standard practice of many neuro-oncologists and is encouraged by the National Comprehensive Cancer Network (NCCN) Guidelines. The purpose of this retrospective chart review is to evaluate how NGS is incorporated into the management of glioblastoma at a single center academic institution. **METHODS:** We identified 85 patients with pathologically confirmed GBM who had NGS done from January 2014-March 2021. The clinical records of all patients were reviewed to denote the frequency of clinical trial enrollment or off-label use of targeted therapy based on the results of NGS. We also denoted the time point in the disease course when NGS was ordered and the trend of frequency of ordering NGS from January 2014-December 2020. **RESULTS:** 28.2% (95% CI 19 to 39.1%) of patients received treatment based on the results of NGS. 8% were enrolled in a clinical trial and 20% were treated with off-label use of targeted therapy at the time of disease progression. There was no statistically significant survival difference seen between patients who had treatment done based on results of NGS compared to those who did not. **CONCLUSION:** NGS results are used to guide treatment or clinical trial enrollment in a significant number of glioblastoma patients, however, the clinical efficacy of this treatment is yet to be determined.