proportional hazards regression analysis was used to evaluate the overall risk of postoperative seizure. RESULTS: 146 patients met the criteria for the study. Of these, 39 patients (27%) experienced a postoperative seizure within 12 months. On univariate analysis, factors significantly associated with postoperative seizure within 12-months included percent (%) of FLAIR volume resected (OR: .81; CI: 0.65-0.99; p=.046), history of AED use (OR: 2.51; CI: 1.20-5.25; p = 0.015), and history of seizure (OR: 2.26, CI: 1.07-4.76; p=0.033). On multivariate analysis, % FLAIR resection maintained significance. (OR of 0.79; CI: .63-.99; p = 0.044). The increased overall risk of postoperative seizure was associated with preoperative seizure < 30 days before surgery. (HR:6.65, CI: 1.02-43.36, p=0.048). DISCUSSION: Our study found that the increased extent of resection of FLAIR volume correlates with decreased odds of seizure occurrence in the 12-month postoperative period. Epileptogenesis of GBM seizures within this time period may be due to tumor-related edema or infiltrative tumor cells. Evaluation of FLAIR imaging postoperatively may be a useful clinical tool to guide AED management in high-risk patients.

NCOG-36. FIRST HEALTH UTILITIES OF GLIOBLASTOMA PATIENTS USING TTFIELDS TREATMENT

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BACKGROUND: Despite the importance of Health State Utilities for health policy and medical decision making, there are no publications that provide high quality utility values estimated from glioblastoma multiforme (GBM) patients. Published health economic evaluations for GBM treatments rely on utilities determined by Garside et al. (2007), which used the standard gamble method in healthy panel members of the UK National Health System. There are no published utilities for GBM estimated from a general population sample, and there are no utility estimates whatsoever for Tumor Treating Fields (TTFields) users. METHODS: We designed a study to remedy this major deficit by eliciting utilities directly from GBM patients using the EuroQol 5-Dimension (EQ-5D) survey. The EQ-5D is a widely used and NICE-recommended tool for the estimation of health state utilities. The survey is composed of a questionnaire that asks patients to specify their health state along 5 dimensions: Mobility, Self-Care, Usual Activities, Pain/Discomfort, and Anxiety/Depression. Statistical models provided by EuroQol's network of researchers convert this data into health state utility estimates. RESULTS: The EQ-5D questionnaire is administered to active patients using TTFields treatment during the study duration, allowing the elicitation of health preference measures for different glioblastoma health states based on: progression status (progressed vs. non-progressed), current treatments (TTFields only vs. TTFields + others) and time-from-diagnosis (0-12 months vs. > 12 months) CONCLUSION: These results are important for understanding the patient preferences using TTFields treatment and communicating these preferences to decision makers. This study is the first to provide direct, high quality utility measures in glioblastoma patients using TTFields treatment.

NCOG-37. NATURAL LANGUAGE ASSESSMENT CORRELATES WITH HEALTH-RELATED QUALITY OF LIFE IN ADULT GLIOMA PATIENTS

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PURPOSE: Impairments of speech are common in glioma patients and negatively impact health-related quality of life. The benchmark for clinical assessments is task-based measures that miss essential components of quality of life status. In this study, we test the hypothesis that variations in natural language (NL) correlate with health-related quality of life status. MATERIALS AND METHODS: Natural language use was assessed using audio samples from 18 patients with newly diagnosed low- and high-grade gliomas collected unobtrusively. NL measures were correlated with the Quality of Life in Neurological Disorders (Neuro-QoL) outcomes at baseline. Spearman's rank-order correlation was used to determine relationships between Neuro-QoL scores and NL measures. RESULTS: Speech rate negatively correlated with functional domains of the Neuro-QoL (satisfaction with social roles: rho=-0.62, p=0.007; participate in social roles: rho=-0.74, p< 0.001;) while positively correlated with impairment domains(fatigue: rho=0.58, p=0.009). CONCLUSIONS: Assessments of baseline natural language may be a useful tool in the context of treatment planning and monitoring outcomes.

NCOG-38. CLINICAL CHARACTERISTICS OF LOW GRADE GLIOMA PATIENTS WITH NON-CANONICAL IDH1 AND IDH2 MUTATIONS

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BACKGROUND: Low grade gliomas (LGGs) develop in young adults and represent 10-15% of all glial tumors. While LGG patients can have longer survival than higher grade tumors, progression, transformation, and ultimately mortality occurs. Mutations in Isocitrate dehydrogenase 1/2 (IDH1/IDH2) are prevalent in LGG and are responsible for gliomagenesis. The classic IDH1 mutation is located at 132 codon and represented as p.Arg132His, but there are non-canonical IDH1 and IDH2 mutations. We sought to compare clinical characteristics of LGG patients with classic IDH1 p.Arg132His mutation to LGG patients with non-canonical IDH1 and IDH2 mutations. METHODS: We queried an IRB-approved registry retrospectively from 12/2004- 9/2019. We included IDH1/IDH2 mutant LGG (WHO grade II) and known IDH1 and IDH2 targeted mutation analysis using standard PCR followed by DNA sequencing to detect point mutations in IDH1/IDH2 genes. We obtained available clinical and histopathological data. We estimated progression-free survival (PFS), time to transformation (TT), and overall survival (OS) using Kaplan-Meier methods. RESULTS: We identified 267 LGG patients with median follow-up of 9.1 yrs (95%CI 8.4-9.9 yrs). Classic IDH1 p.Arg132His mutation occurred in 223 (83.9%) patients. IDH2 mutations occurred in 14 (5.2%) patients. Non-canonical IDH1 mutations were in 30 (11.2%) patients and included the following mutations: p.Arg132Cys (13), p.Arg132Gly (10), p.Arg132Ser (4), p.Arg132Leu (1), p.Arg119Gln (1), and p.Arg172Met (1). Initial presentation, OS, and TT did not differ between IDH1/IDH2 groups. PFS differed significantly between groups with improved median PFS in IDH2 mutant LGG (5.4 yrs; 95%CI 3.5-25.2) versus classic IDH1 mutant LGG (4.1 yrs; 95%CI 3.7-4.9 yrs) and non-canonical IDH1 mutant LGG (2.6 yrs; 95%CI 2.1-4.8) (log-rank p=0.019). Notably, non-canonical mutations were more common in astrocytoma (22/30; 73.3%) than other LGG histologies (p=0.018). CONCLUSIONS: In this cohort, LGG patients with non-canonical mutations have a shorter time to progression than patients with classic p.Arg132His mutation and IDH2 mutations.

NCOG-39. PROGRESSION-FREE AND SURVIVAL RATE OF CHEMOTHERAPY IN PEDIATRICS WITH OPTIC PATHWAY GLIOMAS: A SYSTEMATIC REVIEW

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BACKGROUND: Optic pathway gliomas (OPG) are typically astrocytic neoplasms that represent 3-5% of all pediatric brain tumors. The prognosis of these tumors has often been poor. Total surgical resection of OPG is not amenable, thus the role of surgery remains limited. Chemotherapy can be considered as the main modality of treatment; it is also able to postpone the use of radiotherapy which may harm the brain growth in children. METHODS: We conducted the PRISMA-guided systematic literature search from 6 electronic databases to identify studies reporting outcomes of chemotherapy in OPG patients. The inclusion criteria are literature reporting the survival outcomes of chemotherapy in OPG patients with minimum subjects of 10 patients and aged below 22 years old. RESULTS: A total of 48 out of 557 studies were assessed for its full paper eligibility. Thus, we found 10 studies comprising of 451 patients that met the inclusion criteria for analysis. From 8 different regimens of chemotherapy that were reported, the most commonly used regimens are Carboplastin ± Vincristine. The 3-year, 5-year, and 10-year progression-free survival (PFS) rates were ranged from 23-70%, 34-73%, and 47.1% respectively. The 3-year, 5-year, and 10-year overall survival (OS) rate has a range of 91-95%, 70.1-97%, and 61.3%-62.3% respectively. In detail, we found that 1 study with Cisplatin with Etoposide regimens reported 0% of the 5-year PFS rate, therefore it was excluded from the analysis. There are 2 studies that reported a high rate of 5-year radiotherapy free survival with chemotherapy, ranging from 61-82%. CONCLUSION: This systematic review showed that chemotherapy in patients with OPG leads to an unsatisfactory 5-year PFS rate (34-73%), however it is able to provide a high 5-year OS (91-95%). In the absence of good quality control for these studies, future prospective clinical trials with adjusted confounding factors are urgently needed.

NCOG-40. IMPLEMENTING RANO CRITERIA IN A RESOURCE-LIMITED SETTING AND ITS ASSOCIATION WITH OVERALL SURVIVAL OF GLIOMA PATIENTS: EXPERIENCE FROM A NATIONAL CANCER CENTER IN INDONESIA

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