worse NFS. Among patients with disease progression (n=112), all symptoms, except seizures, worsened from first assessment to time of progression. Up to 22% of patients reported worsening mobility, self-care, and usual activity; 46% and 35% had worsened KPS and NFS, respectively. Seven symptoms and functions were each individually reported by at least 10% of patients as having worsened the most. Worsening of symptoms and functions was not observed among patients with stable disease, except in difficulty understanding. Identified core symptoms/functions worsen at the time of progression demonstrating the relationship between priority constructs and a traditional tumor response measure while highlighting the importance of longitudinal collection of COA. The pattern of worsening was observed via both patient- and clinician-reported outcomes, emphasizing the utility of COA in clinical care and clinical trials.

NCOG-19. PROGNOSTIC FACTORS IN ELDERLY PATIENTS WITH GLIOBLASTOMA: A RETROSPECTIVE INSTITUTIONAL SERIES OF 160 PATIENTS

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INTRODUCTION: Glioblastoma (GBM) prevails in elderly patients, who often suffer from other comorbidities that may affect the outcome. The aim of the study was to investigate clinical characteristics, comorbidities, and treatment-related complications that may impact the outcome of elderly patients with GBM. PATIENTS AND METHODS: In this institutional retrospective study, we included GBM patients ≥ 65 years diagnosed with glioblastoma from 2015 to 2020. We retained information about comorbidities according to Charlson Comorbidity Index (CCI), Karnofsky prognostic score (KPS), MGMTp methylation, and clinical complications during treatment or follow-up. RESULTS: We included 160 patients. Median age was 72 years (65-88). Median time of follow-up was 9.25 months. Median progression-free survival (mPFS) and overall survival (mOS) were 5.84 and 9.67 months. In a multivariate analysis, factors affecting survival were: KPS after surgery ≥ 70 (mPFS: HR 0.24, 0.13-0.44; mOS: HR 0.43, 0.24–0.76. 95% CI), partial vs gross total resection (mPFS: HR 2.15, 1.23–3.77; mOS: HR 2.61, 1.34–5.07. 95% CI), MGMTp methylation (mPFS: HR 0.35, 0.22–0.55; mOS: HR 0.37, 0.24–0.76. 95% CI), and complications after surgery (mPFS: HR 2.52, 1.39–4.55; mOS: HR 2.96, 1.63–5.40. 95% CI). Conversely, age and CCI were not significantly correlated with prognosis. CONCLUSIONS: For elderly patients with GBM, CCI does not seem to predict the outcome. Other factors such as extent of surgery, MGMTp methylaton, postoperative KPS, and clinical complications after surgery retain a significant prognostic importance. Further studies are needed to standardize clinical prognostic scales specific for elderly GBM patients.

NCOG-20. LONGITUDINAL ASSESSMENT OF SUBJECTIVE COGNITIVE FUNCTION IN ADULTS WITH LOW GRADE GLIOMA TREATED WITH PROTON RADIATION THERAPY

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INTRODUCTION: Our group previously demonstrated stability in neurocognitive function (NCF) over a 5-year period after proton radiation therapy (PRT) in low grade glioma (LGG) patients. Subjective cognitive function (SCF) had not been previously explored, nor had individual analyses of cognition, which can detect variability in trajectory. We used the newly derived Functional Assessment of Cancer Therapy-Brain Cognitive-Index (FACT-Br-CI) to examine SCF in LGG patients after PRT and compare longitudinal changes in SCF and NCF. METHODS: 20 LGG patients (*Mage*=37.5) treated with PRT completed NCF tests and self-report measures annually for 5 years or until tumor progression. Group change in SCF was examined with paired t-test (baseline vs final FACT-Br-CI). Individual change scores were calculated for FACT-Br-CI and NCF tests (clinical trials battery composite; CTBC). Individual deterioration in NCF was defined by reliable change index (RCI) on CTBC, and in SCF was defined as decline of >/=1 SD in FACT-Br-CI. Relationships between change in SCF and NCF were explored with correlations. RESULTS: At the group level, no change was observed in FACT-Br-CI between baseline and last follow-up ($t(19)$=-.91;p=ns). Individual SCF analyses at last follow-up found the number of patients reporting decline=3 (15%), improvement=5 (25%), and no change=12 (60%). Individual changes were observed in SCF in 20% of patients at 3 months, 5.9% at 6 months, 12.5% at 12 months, 13.3% at 24 months, and 11.1% at 36 months. Median time to any deterioration in SCF was 36 months and for NCF was not reached. Correlation between CTBC and FACT-Br-CI change scores did not reach statistical significance (r=.41;p=ns). CONCLUSION: Consistent with previous research, group analyses of LGG patients did not show cognitive decline after PRT. However individual analyses of SCF showed variability within the group: some patients experienced cognitive decline during follow up. Consideration of individual differences may yield additional information.

NCOG-21. PREDICTORS OF SURVIVAL IN ELDERLY PATIENTS UNDERGOING SURGERY FOR GBM

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BACKGROUND: An increasing number of elderly patients are being diagnosed with GBM and undergoing surgery. These patients often present with multiple medical comorbidities and have significantly worse outcomes compared to adult patients. The goal of this study was to determine clinical predictors of survival in elderly patients undergoing surgery for GBM. METHODS: A retrospective chart review of all consecutive patients 65 years of age and older that underwent surgery for newly diagnosed GBM from 2005-2018 was performed. A total of 150 patients were included, and subdivided into two age categories; 65-74 and 75 or older. RESULTS: Advanced age and medical comorbidities were not associated with decreased survival (p = 0.07 and p = 0.09, respectively). Postoperative complication was associated with worse survival for all patients (HR = 2.34, p = 0.01) and occurred in patients with longer lengths of stay (p < 0.0001) and discharge destination other than home (p = 0.001). CONCLUSIONS: The presence of medical comorbidities and advanced age are not reasons to exclude patients with GBM from surgical consideration. Postoperative complication is the most significant predictor of survival in elderly patients and can be avoided by a short length of stay and discharge home.

NCOG-22. RETROSPECTIVE ANALYSIS OF VISUAL OUTCOMES AFTER BEVACIZUMAB-BASED THERAPY IN OPTIC PATHWAY GLIOMA

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BACKGROUND: Patients with optic pathway glioma (OPG) are vulnerable to debilitating visual impairment. Consequently, vision stabilization is a primary treatment goal. Bevacizumab has demonstrated promising effects on radiographic tumor burden, but less is known about its impact on vision. Our objective was to characterize visual outcomes associated with bevacizumab-based therapy (BBT) in OPG. METHODS: This is a single-institution, retrospective review of patients treated with BBT for OPG from 2011 to 2020. Ophthalmologic and radiographic data were abstracted before and after treatment. Clinically significant visual acuity (VA) impairment was defined as logMAR > 0.5 and change in VA was defined as change from baseline of logMAR ≥ 0.2. RESULTS: Sixteen patients (13 sporadic OPG, 3 NF1-associated OPG) with evaluable vision outcomes were identified. Treatment indications were radiographic progression (N=15) and vision deterioration (N=4). Prior to BBT, 15 (94%) had failed at least one chemotherapy regimen. BBT regimens included bevacizumab/irinotecan (N=12), bevacizumab monotherapy (N=3) and bevacizumab/vinblastine (N=1). Nine patients (56%) had baseline VA impairment. Thirteen patients (81%) had stable or improved vision after BBT, including 8 of 9 with baseline VA impairment and all 4 patients with vision deterioration as a treatment indication. Eleven patients (69%) had radiographic progression following BBT (Median time-to-progression 66 weeks, IQR 27 weeks), 9 of whom had stable vision at time of progression. There were no associations between VA and age at treatment, NF1-status, histology, or BBT regimen. CONCLUSIONS: BBT was associated with favorable visual outcomes for most patients with OPG in this modest retrospective cohort. Consistent with prior research, radiographic and ophthalmologic outcomes were discordant; a majority of patients experienced progressive disease despite stable vision. Next steps include (1) assessing visual field and optical coherence tomography outcomes in the same cohort and (2) comparing outcomes for BBT with other common therapies including carboplatin/vincristine and vinblastine.

NCOG-23. PATIENT-REPORTED SYMPTOM BURDEN AND INTERFERENCE: A COMPARISON BETWEEN COVID-19 PANDEMIC YEAR AND NORMATIVE DATA IN PATIENTS WITH CENTRAL NERVOUS SYSTEM (CNS) TUMORS

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CNS tumor patients are highly symptomatic causing interference with activity and worse quality of life. Social distancing due to the COVID-19 pandemic increased demands on the patient, caregivers, clinicians, and the health care system. The NCI's Neuro-Oncology Branch Natural History Study (NHS) systematically collected patient-reported outcomes (PROs) provide insight into how these challenges influenced symptom burden and interference during the COVID year. METHODS: Patient and disease characteristic as well as patient-reported symptoms and interference (MDASI-BT/-SP) and general health status (EQ-5D-3L) from 3/2020-2/2021) were compared to NHS normative sample collected prior to 3/2020. RESULTS: The sample (n = 178) was primarily White (82%), male (55%), median age of 45 (range 18 – 79) and KPS ³ 90 (51%). The majority had high-grade (70%) brain (83%) tumors (BT) with ≥ 1 prior recurrence (60%) and 25% were on active treatment. Clinical visits were primarily conducted via telehealth (64%) and 20% of all patients were diagnosed with progression at the time of assessment. Most commonly reported moderate-severe symptoms among BT patients were fatigue (30%), difficulty remembering (28%), feeling drowsy (22%). Among spinal cord tumor patients, fatigue (39%), pain (35%) and numbness/tingling in arms/legs/trunk (35%) were most frequently reported. These symptoms were reported in similar frequencies by the normative sample. Nearly half of the COVID year sample (48%) reported moderate-severe activity-related interference. Reported problems with mobility (38%), self-care (19%), pain/discomfort (40%), and usual activities (50%) were similar in both groups except for increased mood disturbance (53%) was reported during the COVID year. CONCLUSION: These findings support CNS tumor patients remained highly symptomatic with significant impact on health-related quality of life during the COVID year. Clinicians should develop timely individual care plans to help BT patients navigate their disease course. Evaluation of risk associated with more severe symptoms and functional limitations are ongoing.

NCOG-24. REAL-WORLD ANALYSIS OF OUTCOMES OF PATIENTS RECEIVING BEVACIZUMAB FOR RECURRENT GLIOBLASTOMA IN BRITISH COLUMBIA

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BACKGROUND: Bevacizumab (Bev) has been publicly funded in British Columbia (BC) since 2011 for treatment of recurrent glioblastoma (rGBM). We performed a retrospective outcomes assessment of patients with rGBM treated with Bev. METHODS: Patients with rGBM treated at BC Cancer centers with Bev between January 2011 and December 2016 were reviewed. Patient demographics, tumor characteristics, treatment regimens, and dates of radiographic progression and death were collected. Kaplan-Meier method was used to assess survival, and comparisons were made using the log-rank test. RESULTS: 138 patients were reviewed. There were 136 reported deaths with median PFS 3 months (CI_{95} = 2.5 - 3.5) and OS 7 months (CI_{95} = 6.1-8.0) from Bev initiation. 64% of patients on corticosteroids prior to Bev reduced their dose shortly after initiation. The majority of patients (72%) were treated with multiple lines of therapy prior to Bev, with a median time from chemoradiation to Bev initiation of 8 months (range 1-67). Patients started on Bev ≤ 6 months from chemoradiation (prior to completion of adjuvant temozolomide) had improved OS compared to those who started Bev later (p = 0.05), but there was no association between extent of treatment prior to Bev and outcomes (p = 0.182). Addition of chemotherapy to Bev did not improve survival over Bev monotherapy (p = 0.175). CONCLUSIONS: Despite limited benefits to overall survival, Bev is associated with reduction in corticosteroid use and likely improvement in quality of life. Bev combinations with chemotherapy did not confer survival advantage over Bev monotherapy. Furthermore, our results show that patients receiving Bev before completion of adjuvant chemotherapy have better outcomes, suggesting pseudoprogression may have prompted the therapeutic switch. Further research is required to optimize patient selection for and administration of Bev. Additional analysis of rGBM patients prescribed Bev until 2020 in BC is currently underway.

NCOG-25. REVISITING THE PIGNATTI RISK SCORE IN LOW-GRADE GLIOMA PATIENTS IN THE MOLECULAR ERA

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Until now, the Pignatti risk score has been used to guide treatment decisions after histological diagnosis of diffuse glioma WHO grade 2. However, its prognostic value was derived from a historic cohort that has been diagnosed by morphologic rather than molecular criteria. We re-challenged the Pignatti score in a contemporary, molecularly characterized cohort. From our institutional cohort of 422 diffuse gliomas WHO grade 2, 202 patients were identified for whom IDH mutation status was known and 1p/19q co-deletion or loss of ATRX expression unambiguously classified tumors into astrocytoma or oligodendroglioma. Patients with IDH wildtype astrocytoma (n=9), multifocal lesions or brainstem involvement were excluded. Potential prognostic factors including the individual items of the Pignatti score (astrocytoma; age ≥40 years; neurologic deficit; maximum tumor diameter ≥6cm; tumor crossing midline) were correlated with progression-free survival (PFS) by univariate log-rank und multivariate Cox regression analysis. 165 patients with astrocytoma or oligodendroglioma were analysed of whom 109 (66%) did not receive adjuvant radio- or chemotherapy. 94 untreated patients with a minimum follow-up of 24 months entered survival analysis. These patients were classified as "high-risk" (Pignatti 3-5) and "low-risk" (Pignatti 0-2) in 15% and 85% and did not differ with regard to potential prognostic factors (gender; resection vs. biopsy; tumor recurrence) other than the individual Pignatti score items. Diameter ≥6 cm (p=0.006; HR=2.18) and midline crossing (p=0.003; HR=3.54) were identified as independent prognostic factors of PFS. Noteworthy, prognostic factors coincided when all patients (n=144) with a minimum follow-up of 24 months, regardless of adjuvant treatment, were analysed. In IDH mutant, molecularly characterized diffuse gliomas WHO grade 2, the Pignatti risk score as a whole no longer seems to be of prognostic relevance. Instead, outcome seems to be determined by tumor burden.

NCOG-26. SOCIOECONOMIC FACTORS AFFECTING SURVIVORSHIP OF GLIOBLASTOMA PATIENTS IN THE PHILIPPINES: A RETROSPECTIVE COHORT STUDY

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BACKGROUND: Glioblastoma (GBM) is the most common malignant primary brain tumor in adults worldwide. However, data on the survivorship of glioblastoma for low-middle income countries is sparse. We studied the clinical features, treatment, and survivorship of surgically managed GBM patients at a tertiary referral center in the Philippines over a 5-year period. We determined whether socioeconomic factors such as income level, employment status, marital status and educational attainment affected survival. METHODS: A retrospective cohort study within a 5-year period (2015 to 2019) of surgically managed GBM patients in a single center was conducted using chart review and telephone interview. RESULTS: A total of 48 cases met the inclusion criteria. Mean age of the cohort was 41 years, with a male predilection (62%). Mean duration of symptoms was 2.8 months. Majority of the tumors were were >5 cm at the time surgery (90%), and involved more than one lobe (40%). Majority (73%) had preoperative KPS ≥70, and underwent subtotal resection (56%). Only 15% (n=7) had adjuvant chemoradiatherapy while another 23% (n=11) had radiotherapy alone. Median overall survival (OS) was 7.6 months (228 days). Most patients had rural residence (56%), low-income (83%), full time employment (79%), married status (73%) and secondary education (44%). Multi-variate analysis showed that only extent of resection (GTR p=0.0297 and STR p=0.0400) were associated with improved survival while widower status (p=0.0116) were significantly more at risk. CONCLUSION: Many glioblastoma patients managed at our center in the Philippines presented at an advanced stage in their natural history, with larger tumors and more extensive distribution at time of presentation. After surgery, majority did not receive adjuvant treatment. As such, the median overall survival was less than that reported in published cohorts in developed countries. Extent of resection and marital status were significantly associated with survivorship.

NCOG-27. STATUS AS A CLINICAL TRIAL PARTICIPANT AND OUTCOME IN IDH-WILDTYPE GLIOBLASTOMA

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INTRODUCTION: Standard of care for glioblastoma consists of surgery, followed by combined chemoradiation and adjuvant chemotherapy, as per the seminal EORTC study from 2005. Clinical trial patients, being a population selected for functional status, hepatic function, renal function, and lack of other malignancies, may have improved outcome over the general treated population. METHOD: Single center retrospective analysis of status as a clinical trial patient in the upfront setting and other