

QOLP-07. EXPLORING CALM IN PATIENTS WITH HIGH-GRADE GLIOMA

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BACKGROUND: Patients with high-grade glioma report substantial psychological distress, yet are frequently excluded from psycho-oncology research. Managing Cancer and Living Meaningfully (CALM) is an expressive-supportive psychotherapy designed to address the inevitable challenges that patients with advanced cancer face. CALM was shown in a large randomized controlled trial to reduce depression and death-related distress, but brain cancer was an exclusion criterion. **METHODS:** In this ongoing ORBIT Model Phase Ib Refine trial, 10 adults with high-grade glioma and heightened distress (PHQ/DADDS) participated in CALM. Feasibility and acceptability were assessed based on established metrics, satisfaction was explored by surveys and exit-interviews, and preliminary efficacy of reducing distress was analyzed by pre to post-CALM paired t-tests; effect sizes estimated using Cohen's *d*. **RESULTS:** Of 11 patients referred and screened, 10 enrolled in the study (91% enrollment rate; 70% GBM; 70% female; *Mean*=55yrs). Reasons for withdrawal was disinterest in intervention topics (*n*=2). Eight patients completed baseline assessments and at least one CALM session. To date, seven have completed treatment. Retention is 63%, with one participant still in active treatment. No adverse events were determined to be study-related. Perceived benefit was high (4.8/5), and all participants reported they would recommend program to others. Pre- to post-CALM analyses show medium-to-large effects on reducing depression (*d*=1.2), anxiety (*d*=.74), and death-related distress (*d*=.54). Small effects were seen for quality-of-life improvement (*d*=.26). Fear of cancer recurrence worsened (*d*=.75). **CONCLUSIONS:** Preliminary data suggests that CALM is both feasible and acceptable in adult patients with high-grade glioma. Enrollment and retention rates were adequate. Patients reported high benefit and recommendation to others. Depression, generalized anxiety, and death-related distress all improved with medium-to-large effects, suggesting CALM may be a promising intervention for high-grade glioma patients as they navigate the challenges of brain cancer. Adjunctive treatment may be necessary to address fear of cancer recurrence.

QOLP-08. THE LANDSCAPE OF EPILEPSY ASSOCIATED WITH DIFFUSELY INFLTRATIVE GLIOMAS

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Seizures are among the most prevalent co-morbidities associated with glioma, and pose a serious threat to patients. Our prior work showed that IDH mutation (IDHmut) was associated with much greater seizure frequency at the time of initial glioma diagnosis. However, less is known about the variables that contribute to seizure risk throughout the course of disease. We therefore collected data from 247 patients with grade 2-4 glioma, and determined seizure risk using Kaplan-Meier survival probabilities and multivariable cox regression analyses. Median follow-up of IDH wildtype (IDHwt) and IDHmut glioma patients was 15 months and 36 months, respectively. Incidence of pre-operative seizures for IDHwt and IDHmut patients was 75/168 (45%) and 60/79 (76%), and incidence of post-operative seizures was 70/168 (42%) and 43/79 (54%), respectively. Patients who had a pre-operative seizure had a shorter time to their first post-operative seizure than patients who never had a pre-operative seizure in both IDHwt (*P*< 0.0001) and IDHmut (*P*= 0.039) cohorts. Among IDHmut glioma patients, those with subtotal resections developed post-operative seizures faster (median time to first seizure= 9.9 months) than those with gross-total resections (median not reached) (*P*= 0.0005), but a similar pattern was not observed in IDHwt glioma patients (*P*= 0.20). Those with IDHmut astrocytomas more quickly developed post-operative seizures (median= 11.1 months), compared to those with IDHwt astrocytomas (24.9 months) or IDHmut oligodendrogliomas (median not reached) (*P*= 0.033). Tumor progression closely followed post-operative seizures in patients with IDHwt gliomas when either their first post-operative seizure occurred longer than 6 months following resection, or when their post-operative seizures worsened in quality. These data suggest the best predictors of post-operative seizures are as follows: the presence of pre-operative seizures; extent of surgical resec-

tion; IDHmut status. These data will help clinicians better manage glioma patients by identifying those at greatest risk of seizures.

QOLP-09. AUTONOMY DURATION AS ANALYZED BY KPS ≥ 70 CUMULATIVE TIME IN PATIENTS WITH BIOPSY-ONLY GLIOBLASTOMA (BO-GBM). A SUB-ANALYSIS OF THE TIMONE COHORT

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BACKGROUND: Maintenance of autonomy is a crucial and understudied issue for glioblastoma patients whose outcome is poor. Biopsy-only glioblastoma (BO-GBM) present with short survival and independence is of particular importance. Our objective was to explore their functional outcome. **MATERIAL AND METHODS:** A regional glioma SIRIC cohort was conducted at CHU Timone in 2014-2017 and we retrospectively reviewed the BO-GBM subgroup. We prospectively collected age, tumoral surface, treatment allocated and completed, and survival outcome. Functional independence was analyzed as a cumulative time of Karnofsky performance status (KPS) ≥ 70 from the date of diagnosis until death. We analyzed potential factors associated to time with KPS ≥ 70. **RESULTS:** Among 535 patients enrolled in the cohort, surgery was restricted to biopsy in 139 patients (BO-GBM). Mean tumoral surface measured on gadolinium-enhanced T1-weighted MRI was 1198 mm² (min: 65; max: 4515mm²). Forty-seven patients were referred to radiotherapy-temozolomide (RT-TMZ), 75 considered unfit for RT received chemotherapy upfront (CT-UF), and 17 patients were referred to palliative care. Median OS was 7.5 months (95%CI: 6.0-9.2), 14.0 months (95%CI: 9.7-18.7) and 6.0 months (95%CI: 4.6-7.7) for BO-GBM, RT-TMZ and CT-UF respectively. At diagnosis, 81 (58.3%) patients presented with self-care capacity (KPS ≥ 70%). For these patients, median time of autonomy preservation was 7.6 months (95%CI: 6.1-9.0). Median time of autonomy preservation differed according to treatment modalities: it was 8.6 months (95%CI: 5.9-11.3) versus 6.3 months (95%CI: 2.9-9.7) for RT-TMZ versus CT-UF group respectively (*p*< 0.001). In multivariate analysis, time with KPS ≥ 70 was correlated with age (*p*=0.001) and KPS at diagnosis (*p*< 0.001). **CONCLUSION:** Patients with inoperable GBM referred to radiotherapy-temozolomide present a valuable duration of functional independence, although shorter in patients not referred to RT. Duration of functional independence could be considered in addition to PFS and OS for treatment evaluation in patients with GBM.

QOLP-10. A LONGITUDINAL OBSERVATIONAL STUDY OF EXERCISE BEHAVIOR IN GLIOBLASTOMA PATIENTS TREATED WITH TUMOR-TREATING FIELDS

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Glioblastoma (GBM) patients can use tumor-treating fields (TTFs) with adjuvant temozolomide (TMZ) to treat their disease. TTFs involve wearing transfixed transducers to the shaved scalp, and the transducers are wired to a battery pack that is either fixed or carried (weighing 2.7 pounds). EF-14 clinical trial did evaluate health-related quality of life with standardized patient-report outcome measures but did not measure exercise behavior. We sought to evaluate the exercise behavior of GBM patients using TTFs. We consented GBM patients who intended to use TTFs with adjuvant TMZ after completion of chemoradiation. After informed consent and before starting TTFs, patients completed a self-administered questionnaire, Godin Leisure-Time Exercise Questionnaire, to assess exercise behavior/physical function. To calculate our primary outcome of total exercise behavior, the frequency of exercise sessions per week within each intensity category was multiplied by the average reported duration, weighted by an estimate of the MET, summed across all intensities, and expressed as average MET-hr/wk. Prior work has defined that physical function can be compared as < 9 MET-h/wk vs. ≥ 9 MET-h/wk. We evaluated at baseline and up to 24-week exercise behavior in patients with TTFs vs. historical controls not using TTFs. We enrolled 19 total GBM patients, with 14 proceeding to use TTFs. Of the 14 patients on

TTFs, seven patients (50%) completed ≥ 9 MET-h/wk of exercise, and this level was maintained 8, 16, and 24 weeks after starting TTFs. Six months after the completion of chemoradiation, mean MET-h/wk was decreased in the TTFs group ($n=6$) (10.71 $sd=7.06$) vs. historical controls ($n=38$) (27.35 $sd=46.94$). TTFs did not interfere with exercise behavior in our GBM cohort, but when compared to GBM patients not utilizing TTFs, there could be a long-term impact on exercise behavior. More research is needed to evaluate exercise behavior in GBM patients using TTFs.

QOLP-11. WORKING MEMORY TRAINING FOR ADULTS WITH GLIOMA

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BACKGROUND: CogMed Working Memory Training (CWMT) is a computer-based program shown to improve working memory (WM) among those with cognitive impairment. No study to date has investigated its feasibility, acceptability, and satisfaction in adult patients with glioma, despite the well-documented incidence of WM impairment in this population. **METHODS:** Twenty patients with glioma and objective and/or perceived WM deficits enrolled in the study: 52% high-grade, 57% female, $Age=47$ (range=21-72 years). Adverse events were monitored to determine safety. Feasibility and acceptability were assessed based on established metrics. Satisfaction was explored by exit-interviews. Neurocognitive tests and measures of psychological distress were administered pre-/post-CWMT to assess preliminary efficacy. **RESULTS:** Of 20 enrolled patients, 16 completed the study protocol (80% retention rate). Reasons for withdrawal included time burden ($n=2$); tumor-related fatigue ($n=1$) or lost to follow-up ($n=1$). No adverse events were determined to be study-related. Adherence was 69%. The perceived degree of benefit was only moderate. Pre- to post-CWMT assessments showed medium to large effects on near-transfer tasks ($bp2=.35, p=.01$ and $hp2=.25, p=.04$) and far-transfer tasks ($hp2=.20, p=.07$ and $hp2=.16, p=.12$) but small to no effects on perceived WM ($hp2=.01, p=.79$) and psychological distress ($hp2=.01-.06, p=.35-.79$). **CONCLUSION:** CWMT was found to be safe and acceptable in adult patients with glioma. Enrollment, retention rates, and treatment adherence were all adequate, yet only moderate perceived benefit was reported. Given that objective measures of WM improved but psychological distress did not, it may be worth considering a less burdensome CWMT protocol, perhaps investigating a less time intensive intervention with respect to both frequency and length of training sessions.

QOLP-12. ILLNESS UNDERSTANDING AND PERCEPTIONS ABOUT PROGNOSIS IN PATIENTS WITH MALIGNANT GLIOMAS AND THEIR CAREGIVERS

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BACKGROUND: Malignant gliomas (MG) are incurable tumors with limited survival. Prognostic awareness is essential for informed decision making, but patients' and caregivers' perceptions about their illness and prognosis are not well understood. **METHODS:** We conducted a prospective, single-institution study in patients with newly diagnosed MG and their caregivers, following the outpatient visit in which their neuro-oncologist disclosed pathology results and discussed treatment options. Participants (patients and caregivers) completed the Prognosis and Treatment Perceptions Questionnaire to assess information preferences, treatment goals and prognostic understanding. **RESULTS:** Of patients approached, 82% (14/17) were eligible and enrolled in the study. The majority of patients were male (9/14, 64%), median age 60 years (range 26-76) and had a glioblastoma (11/14, 79%). Most caregivers were female (8/11, 73%) and married to the patient (7/11, 64%). The majority of patients said their cancer was curable (10/13, 77%, one patient did not answer), while only 3/11 caregivers (27%) said the patient's cancer was curable. Furthermore, 7/13 patients (54%) and 8/11 caregivers (73%) reported that their oncologist said their cancer was not curable, and the remainder (6/13 patients, 46% and 3/11 caregivers, 27%) said the oncologist "did not say" whether it was curable. Most patients (10/14, 71%) and caregivers (8/11, 73%) expressed a tendency to focus on the best-case scenario in response to information from their oncology team about their cancer. **CONCLUSION:** Although most patients with MG and their caregivers acknowledged being told that their cancer was incurable, the majority of patients reported that their cancer

was curable. Patients and caregivers often reported focusing on the best-case scenario regarding their cancer. Further investigation is warranted to explore strategies to support patients and caregivers learning about their incurable cancer.

QOLP-13. RETROSPECTIVE REVIEW OF HOSPICE CARE UTILIZATION IN GLIOBLASTOMA PATIENTS IN A TERTIARY CARE CENTER

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BACKGROUND: Glioblastoma is a highly aggressive grade IV tumor of the brain. Standard of care is maximal safe resection followed by radiation therapy and chemotherapy. Despite optimal management, majority recur, and the median survival is 2-3 years. Hospice is a philosophy of care to alleviate end-of-life suffering, and it can also relieve caregiver fatigue. **METHODS:** This is a retrospective chart review in a tertiary care center. IRB approval was obtained from the Office for the Protection of Research Subjects. ICD-10 code for malignant gliomas C71.9 was used to query EMR at UIC from 2015-2020. Patients with primary glioblastoma that had their entire neuro-oncologic care at UIC were included in the data analysis. Patient's age < 18 years, unknown date of death, or those who transitioned to a different facility were excluded. Data included were demographic (including marital status as a proxy for social support), insurance, ethnicity, tumor characteristics, and treatments provided. End-of-life quality measure assessed were (1) no chemotherapy < 2w, (2) hospice status < 7 days, (3) no hospital admission > 30 days (4) no ICU admission < 14 days. **RESULTS:** 48 patients with primary glioblastoma were identified and out of those, a total of 35 patients received entirety of neurooncological care at our center. Date of death was available for 13 patients. 9 patients had been referred to hospice and 4 were not. Demographic variables were similar except social support – patients referred to hospice were more likely to be married. End-of-life quality measures were met in all patients in hospice group (9/9) but only in half of those not referred to hospice (2/4). **DISCUSSION:** Social support has an impact on enrollment of hospice care. Including goals of care discussion earlier in the treatment would require a multi-disciplinary team with additional involvement of supportive care, nurses, and social workers.

QOLP-14. LONG-TERM IMPACT OF ADULT GLIOMA ON HEALTH-RELATED QUALITY OF LIFE: A SYSTEMATIC REVIEW

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BACKGROUND: Glioma diagnosis can be devastating, and results in a wide range of symptoms. Relatively little is known about the long-term challenges these symptoms pose on HRQOL. The aim of this review is to identify the long-term HRQOL issues reported at least two years following diagnosis of glioma. **METHOD:** Systematic literature searches were carried out using Medline, EMBASE, CINAHL, PsycINFO, and Web of Science Core Collection. Searches were designed to identify a range of reported HRQOL aspects defined as physical, mental or social issues, in adult WHO grade II or III patients. To capture the full extent of patients' experience, studies of any design reporting on primary data where patients had at least two years follow-up from diagnosis were included. WHO grade I and grade IV tumours were excluded due to their different prognoses and the expected nature of their disease trajectories. Narrative synthesis was used to collate findings. **RESULTS:** The search returned 8438 articles. 477 titles remained after title and abstract screening, with seventeen full text articles included in the final analysis. The majority of studies used quantitative methods, with only two articles reporting qualitative or mixed methodology. Articles were predominantly cross-sectional studies ($n = 9$), along with cohort studies ($n = 3$), clinical trials ($n = 3$) and pilot studies ($n = 2$). Results indicated that patients reported a variety of issues influencing their HRQOL, with emotional/psychological/cognitive changes the most frequently reported. Physical complaints included problems with fatigue, seizures and maintaining daily activity. Social challenges included strained social relationships and issues managing finances. Patient coping strategies were found to significantly influence wellbeing and subsequent HRQOL. **CONCLUSION:** Glioma patients' long-term HRQOL and daily functioning can be impacted by their physical, mental and social wellbeing. Findings from this review lay the groundwork for efforts to improve patient long-term HRQOL.