HOUT-19: THE SHORT-TERM OVERALL SURVIVAL ASSOCIATED WITH SINGLE- VS. MULTI-AGENT CHEMOTHERAPEUTIC REGIMENS FOR 1p/19q-CODELETED WHO GRADE III ANAPLASTIC OLIGODENDROGLIOMAS: A NATIONAL EVALUATION

INTRODUCTION: Although diffuse gliomas of oligodendrocytic lineage demonstrate chemosensitivity, the survival outcomes associated with single-(i.e. temozolomide; TMZ) or multi-agent (i.e. PCV) chemotherapy regimens remain uncertain for anaplastic oligodendrogliomas (AO). METHODS: Patients presenting between 2010–2016 with 1p/19q-coredleted WHO grade III AO were identified by ICD-O-3 and site-specific factors from the National Cancer Database, which comprises >70% of cancers newly-diagnosed in the U.S. Predictors of receiving first-line single- vs. multi-agent chemotherapy were assessed by multivariable logistic regression. Overall survival (OS) was estimated by Kaplan-Meier approaches and evaluated by multivariable Cox regression. RESULTS: There were 952 patients with 1p/19q-coredleted WHO grade III AO and complete first-line chemotherapy data, with: 13% (n=124) no chemotherapy, 11.1% (n=106) monotherapy by TMZ chemotherapy. In logistic regression of chemotherapy-treated AO, more recent diagnosis was associated with higher multi-agent (OR=1.48/year, 95%CI=1.25–1.74, p<0.001) rates; otherwise there were no associations of single- vs. multi-agent chemotherapy with patient sex, age-at-diagnosis, race, insurance status (reference=privately insured), comorbidity index, tumor greatest dimension, tumor location (reference=frontal lobe) or crossing of midline, nor with radiotherapy or EOR (p>0.03). Multi-agent usage rose from 4% (n=30) to 24% in 2013 (n=220) to 45% (n=425) in 2019. Ours (IQR=18.8–54.8). The unadjusted Syr-OS rate was 57.4% (95%CI=43.5–69.1) for no chemotherapy, 72.1% (95%CI=67.1–76.5) for single-agent, and 77.5% (95%CI=79.9–88.1) for multi-agent. Cox regression (adjusting for the time of course of radiotherapy and/or RT, patient demographic and tumor characteristics) demonstrated no significant OS difference between single- and multi-agent (HR=0.91, 95%CI=0.38–2.15, p=0.82) chemotherapy. CONCLUSIONS: In a national database of AOIs managed in the ‘real-world’ setting, there is increasing utilization of multi-agent (i.e. PCV) chemotherapy; but no significant difference in risk-adjusted short-term mortality (i.e. ~3-5yrs after diagnosis) between first-line multi- versus single-agent (i.e. TMZ) chemotherapy. These findings provide preliminary data while we await the long-term FFS and OS results from the CODEL trial.

HOUT-20. TIME-DEPENDENT ANALYSIS OF SELECTIVE SEROTONIN REUPTAKE INHIBITOR TREATMENT ON OVERALL SURVIVAL OF PATIENTS WITH GBM

Sebastian Otto-Meyer1, Rian DeFacco1, Corey Dusseld1, Erik Ladomersky2, Rima Lukas1, Christina Amsel1, Lihe Zhai1, Kristen Lauing1, Denise Scholten1, and Derek Wannwright1
1Northwestern University, Chicago, IL, USA, 2Northwestern University, Feinberg School of Medicine, Department of Neurological Surgery, Chicago, IL, USA

Glioblastoma (GBM) is the most common and aggressive form of primary brain tumor in adults. We recently investigated the hypothesis that treating GBM patients with psychosocial modifiers would be associated with improved overall survival (OS). Our study retrospectively analyzed 497 patients with GBM treated at Northwestern Medicine with or without selective serotonin reuptake inhibitors (SSRI) between the years 2000 and 2018. Information from the Northwestern Medicine Enterprise Data Warehouse was analyzed for baseline covariates including sex, age at diagnosis, type of surgery, and Charlson Comorbidity Index Score. Approximately (one-third of analyzed patients were prescribed SSRIs, with highly variable treatment times. Several statistical methods were used to perform adjusted analyses including: (i) an extended Cox Proportional Hazards Model with SSRI as a time-dependent variable; (ii) a Cox Model using inverse probability weighting; and (iii) a Cox Proportional Hazards model with landmark analyses. The hazard ratios (95% CIs) for each statistical model analyzing the association between SSRI treatment and OS were (i) 1.26 (0.97–1.63), (ii) 1.06 (0.80–1.43), and (iii) ranged from 1.01 (0.74–1.38) to 1.26 (0.75–2.09). Our analysis found no significant association between the time of SSRI treatment and GBM patient OS. Future work will study additional considerations for psychosocial modifier treatment and their potential effect(s) on GBM patient OS including: (i) confounders due to the extent of cancer treatment; (ii) comorbidities not associated with tumor burden; (iii) absolute leucocyte counts; and (iv) length of treatment required for enhancing immunemediated anti-GBM mechanisms.

HOUT-21. CHARACTERISTICS OF SHORT-TERM SURVIVAL IN PATIENTS WITH GliOBLASTOMA: A RETROSPECTIVE ANALYSIS

Andrew Barlogie1, Patrick Healy2, Eric Lipp3, James Herndon4, Leslie Thomas5, Margaret Johnson6, David Ashley2, Annick Desjardins2, Dina Randazzo2, Henry Friedman2, John Kirkpatrick2, and Katherine Peters2; 1Duke University School of Medicine, Durham, NC, USA, 2Duke University Medical Center, Durham, NC, USA

We sought to identify characteristics of glioblastoma (GBM) patients with short survival (< 10 months) in order to identify prognostic factors useful for guiding treatment management. This is an IRB-approved retrospective analysis of adult newly diagnosed GBM patients from 2008–2016 who survived < 10 months from diagnosis. We extracted demographics, tumor characteristics, and treatment details. We calculated survival from surgical diagnosis to date of death. The cohort includes 197 subjects (61% male) with a median age of 68 years (range 19–94). The majority (93%) are non-Hispanic white. The cohort has a median survival of 144 days (95% CI: 130–160). We focused on traditional prognostic indicators, including extent of surgical resection and KPS. A majority had biopsy only (n=92, 46.7%) rather than gross total (n=59, 29.9%) or subtotal (n=46, 23.4%) resection. Moreover, 160 out of 197 patients had a documented KPS with a majority being below 90 (KPS=70–80 (n=96); KPS < 70 (n=31)). Of 179 patients with data on RT course, 18% (n=32) received no RT or only pre-tropic after diagnosis, 3% (n=6) received only RT, 54% (n=97) received RT+temozolomide (TMZ), and 24% (n=43) received RT+TMZ+bevacizumab. Of the 147 subjects receiving RT, 79% completed their RT course as most commonly. RT was prescribed as a single- vs. multi-agent chemotherapy (HR=0.91, 95%CI=0.38–2.15, p=0.82) chemotherapy. We concluded that GBM patients with survival < 10 months were more likely to receive single-agent only and a KPS < 90, notably associated with poorer prognosis. We continue to explore this dataset for further prognostic factors, particularly inability to complete planned RT course, and are comparing these traits to a larger cohort.

HOUT-22. EVALUATING CLINICAL IMPACT UTILIZING THE RANO-PRO COLLABORATIVE’S STANDARDIZED PRIORITY CONSTRUCTS

Elizabeth Vera1, Mark Gilbert1, Orwa Abool1, Ramya Antony1, Lisa Boris1, Christine Bryla1, Eric Burton1, Christine Cordova1, Sonja Grandon1, Nicole Leggierto1, Marta Penas-Prado1, Jennifer Reyes1, Christine Sugel1, Brett Theeler2, Kathleen Walling1, Jing Li3, and Terri ABraxton1
1Cancer Research, National Cancer Institute, National Institutes of Health, Bethesda, MD, USA, 2National Institutes of Health, Bethesda, MD, USA

Increasing recognition of the symptom burden and functional limitations among primary brain tumor (PBT) patients has led to proposing clinical outcomes assessments as an additional measure of a treatment’s effectiveness. The RANO-PRO Collaborative recommended core symptoms for evaluation in clinical care and research: fatigue, depression, anxiety, pain, sleep disturbance, appetite change, weight change, anorexia, constipation, difficulty swallowing, anemia, walking, seizures, communication, memory, and treatment-specific symptoms. We evaluated these symptoms using the MDASI-Brain Tumor (BT) in the PBT patient sample of the NCI-NOB Natural History Study, in relation to disease progression, by descriptive statistics, and independent-and-paired-samples t-tests. The sample included 434 PBT patients (59% male, median age=50 (18–83), 82% white, 43% with a prior recurrence). In the unadjusted 5yr-OS rate was 57.4% (95%CI=43.5–69.1) for no chemotherapy, 75.0% (n=714) single-, and 11.1% (n=106) multi-agent chemotherapy. In logistic regression of chemotherapy-treated AO, more recent diagnosis was associated with higher multi-agent (OR=1.48/year, 95%CI=1.25–1.74, p< 0.001) rates; otherwise there were no associations of single- vs. multi-agent chemotherapy with patient sex, age-at-diagnosis, race, insurance status (reference=privately insured), comorbidity index, tumor greatest dimension, tumor location (reference=frontal lobe) or crossing of midline, nor with radiotherapy or EOR (p>0.03). Multi-agent usage rose from 4% (n=30) to 24% in 2013 (n=220) to 45% (n=425) in 2019. Ours (IQR=18.8–54.8). The unadjusted Syr-OS rate was 57.4% (95%CI=43.5–69.1) for no chemotherapy, 72.1% (95%CI=67.1–76.5) for single-agent, and 77.5% (95%CI=79.9–88.1) for multi-agent. Cox regression (adjusting for the time of course of radiotherapy and/or RT, patient demographic and tumor characteristics) demonstrated no significant OS difference between single- and multi-agent (HR=0.91, 95%CI=0.38–2.15, p=0.82) chemotherapy. CONCLUSIONS: In a national database of AOIs managed in the ‘real-world’ setting, there is increasing utilization of multi-agent (i.e. PCV) chemotherapy; but no significant difference in risk-adjusted short-term mortality (i.e. ~3-5yrs after diagnosis) between first-line multi- versus single-agent (i.e. TMZ) chemotherapy. These findings provide preliminary data while we await the long-term FFS and OS results from the CODEL trial.