monia while undergoing chemotherapy. The patient did not have any medical comorbidities. He was clinically asymptomatic following surgery, completed concurrent phase of combined chemotherapy and radiation and was undergoing treatment with adjuvant temozolomide. He had radiographic improvement of the brain tumor (decreased size, contrast enhancement and T2 flair) after three cycles of adjuvant temozolomide. However, after cycle three the patient developed fever and abdominal pain. Evaluation in the emergency room revealed low absolute lymphocyte count (0.7 K/MM3), positive COVID-19 point of care test and CT chest revealed patchy peripheral bibasilar ground glass and consolidative opacities compatible with pulmonary infection, with viral etiology such as COVID. Symptoms resolved after 2 weeks. Due to active infection and leucopenia temozolomide was on hold for 1 month. He was considered cleared of infection after resolution of symptoms. Temozolomide was initiated after resolution of leucopenia. Patient continued to do well after administration of subsequent temozolomide cycles and repeat CT chest after 2 months revealed resolution of consolidation and no new areas of consolidation. Temozolomide was safely administered in this patient without reactivation of COVID-19 infection. He did not have any thrombotic events.

### COVD-30. A SNAPSHOT OF THE IMPACT OF COVID-19 ON PATIENTS WITH NERVOUS SYSTEM TUMORS

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BACKGROUND: The impact of COVID-19 on patients with nervous system tumors is not known. This population is often immunosuppressed, susceptible to neurological complications, and requiring of frequent cancer care, all of which may confer vulnerability to poorer outcomes after infection. METHODS: Clinical data were obtained from structured electronic medical record elements, clinical note text and laboratory RESULTS: Each source was identified, integrated and analyzed using the Palantir Foundry platform (Syntropy), part of the Context Engine Data Management System through the MD Anderson Cancer Center (MDACC) IRB approved D3CODE initiative. The population of interest was patients diagnosed with COVID-19 who had been seen at the Brain and Spine Center for nervous system tumors. RESULTS: 8,177 ambulatory patients were seen at the Brain and Spine Center from 3/1/20–9/1/20. COVID status was known for 1,753 (21%). Sixty-one (0.7%) were COVID-19 positive. Of these, 17 had primary nervous system tumors. Seven (41%) were treated in the emergency department or hospital for infection. Two were symptomatic but did not require further care. Eight were asymptomatic. Nine (53%) had alterations in cancer management within one week of COVID-19 diagnosis – delayed surgery (3), delayed/interrupted chemotherapy (2), delayed/interrupted radiation (2), cancer treatment discontinued (2). Eight patients (47%) had no clear impact of infection on their cancer treatment, three were on surveillance. Three (18%) unique patients had neurological symptoms attributed to/exacerbated by COVID-19 – encephalopathy (2), seizure (2), stroke (1). CONCLUSION: No deleterious effects of alterations in cancer management after COVID-19 infection have been identified thus far, though longitudinal follow up is warranted. Our results suggest that COVID-19 infection frequently incurs medical complications or alterations in cancer treatment. The potential impacts of COVID-19 on our vulnerable neuro-oncology patient population should be further explored, and attention to these potential implications for our patients is warranted by treating clinicians.

### COVD-31. THE STATE OF NEURO-ONCOLOGY DURING THE COVID-19 PANDEMIC: A WORLDWIDE ASSESSMENT

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To assess the impact of the pandemic on the field, we performed an international web-based survey of practitioners, scientists, and trainees from 21 neuro-oncology organizations across 6 continents from April 24 through May 17. Of 582 respondents, 258 (45%) were in the US, and 314 (55%) were international. 80.4% were affiliated with academic institutions. 94% respondents reported changes in clinical practice; 95% reported conversion to telemedicine for at least some appointments. However, almost 10% practitioners felt the need to see patients in person specifically because of billing concerns and perceived institutional pressure. Over 50% believed neuro-oncology patients were at increased risk of contracting COVID-19. 67% practitioners suspended enrollment for at least one clinical trial: 53% suspended phase II and 62% suspended phase III trial enrollment. 71% clinicians feared for their or their families' safety, specifically because of their clinical duties. 20% percent said they did not have enough PPE to work safely; about the same percentage were unhappy with their institutions' response to the pandemic. 43% believed the pandemic would negatively affect their academic career, and 52% fellowship program directors were worried about losing funding for their training programs. While 69% respondents reported increased stress, 44% were offered no psychosocial support. 37% had their salary reduced. 36% researchers had to temporarily close their laboratories. In contrast, the pandemic created positive changes in perceived patient and family satisfaction, quality of communication, and use of technology to deliver care and interactions with other practitioners. CONCLUSIONS: The pandemic has altered standard treatment schedules and limited investigational treatment options for patients. In some cases, clinicians felt institutional pressure to continue conducting billable in-person visits when telemedicine visits would have sufficed. A lack of institutional support created anxiety among clinicians and researchers. We make specific recommendations to guide clinical and scientific infrastructure moving forward.

## CELL SIGNALING AND SIGNALING PATHWAYS

### CSIG-01. IDENTIFICATION OF PATHOGENESIS-RELEVANT MICRORNAS IN BRAIN METASTASIS

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When brain metastasis develops, the prognosis of cancer is dismal. Insights into the biology of the primary cancer and the brain metastasis are necessary to inform more effective and targeted treatments. To study the role of microRNAs in brain metastasis, we performed differential expression profiling of 12 primary tumors and their paired brain metastases using smRNAseq (the 12 primary tumors included three non-small cell carcinomas, three melanomas, three endometrial carcinomas, one breast carcinoma, one thyroid carcinoma and one renal-cell carcinoma). To start, we identified microRNAs that were either highly upregulated or downregulated in the brain metastasis samples as compared to the paired primary tumors. After confirmation with real-time quantitative PCR, we further investigated the top microRNAs from both groups through functional assays performed in cell lines generated from primary melanoma, melanoma lymph node metastasis, and melanoma brain metastasis. From this top-down, patient sample to model cell-line approach we identified two microRNAs that are potentially important regulators in the development of brain metastasis. Characterization of their targets and their interactions may offer a therapeutic opportunity to improve the prognosis of patients with brain metastasis.

### CSIG-02. R-RAS SUBFAMILY PROTEINS ELICIT DISTINCT PHYSIOLOGIC EFFECTS AND PHOSPHOPROTEOME ALTERATIONS IN NEUROFIBROMIN-NULL MPNST CELLS

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Loss of the Ras GTPase-activating protein neurofibromin promotes the development of aggressive spindle cell neoplasms known as Malignant Peripheral Nerve Sheath Tumors (MPNSTs) in patients with the genetic disorder neurofibromatosis type 1 (NF1). Currently, the available chemotherapeutic regimens and radiotherapy are ineffective against MPNSTs, so the prognosis for patients with these neoplasms is poor. Neurofibromin loss dysregulates