

growing lesions ($n > 1$) at time of intervention (50.0%) versus those treated with surgery (15.2%) ($p < 0.05$). Likewise, pre-treatment KPS was lower in the bevacizumab cohort (median: 60) vs the surgery cohort (median: 90) ($p < 0.05$). Patients treated with bevacizumab demonstrated significantly decreased PFS (%PFS at 1-year 16.7% vs 86.7% and 87.8% for craniotomy and LITT, respectively; %PFS at 2-years 0% vs 86.7% and 73.2% for craniotomy and LITT, respectively, $p < 0.05$). Similar results were observed for OS (%OS at 1-year for bevacizumab 33.3% vs 93.3% and 73.8% for craniotomy and LITT, respectively; %OS at 2-years for bevacizumab 11.1% vs 64.6% and 63.2% for craniotomy and LITT, respectively, $p < 0.05$). CONCLUSIONS: Preliminary analysis shows that bevacizumab therapy in our institution is being chosen for patients with lower KPS and multiple regrowing lesions while surgical intervention is being chosen for patients with good KPS and single, symptomatic regrowing lesions. While the comparative outcomes after bevacizumab appear to be significantly worse than surgical management, it remains unknown if the difference is more related to its true efficacy or the significant discrepancy between the comparison groups.

MLTI-07. PREOPERATIVE VERSUS POSTOPERATIVE STEREOTACTIC RADIOSURGERY FOR LARGE BRAIN METASTASES: AN INTERNATIONAL META-ANALYSIS

Henry Ruiz Garcia¹, Eric Lehrer², Adip Bhargava¹, Jennifer Peterson¹, Kaisorn Chaichana¹, Alfredo Quinones-Hinojosa¹, Anna Harrell¹, David Routman¹, Terry Burns¹, Nicholas Zaorsky³, and Daniel Trifiletti¹; ¹Mayo Clinic, Jacksonville, FL, USA, ²Icahn School of Medicine at Mount Sinai, New York, NY, USA, ³Penn State Cancer Institute, Hershey, PA, USA

PURPOSE: Preoperative stereotactic radiosurgery (SRS) for symptomatic brain metastases has arisen as a therapeutic option for patients with brain lesions, potentially reducing radionecrosis risk, leptomeningeal disease risk, as well as delays in systemic therapy after craniotomy. The purpose of our work is to analyze the current evidence regarding 1-year local control (LC) and RN rates in the preoperative and postoperative settings. **METHODS AND MATERIALS:** Population, Intervention, Control, Outcomes, Study Design/Preferred Reporting Items for Systematic Reviews and Meta-analyses and Meta-analysis of Observational Studies in Epidemiology guidelines were used to select articles in which patients had "large" brain metastases (> 4 cm³ or > 2 cm in diameter) solely treated with preoperative or postoperative SRS and 1-year LC and/or rates of RN reported. Radiosurgery was stratified by timing: preoperatively or postoperatively. Random effects meta-analyses using timing of SRS relative to surgery as covariates were conducted. Meta-regression and Wald-type tests were used to determine the effect of increasing tumor size on the summary estimate, where the null hypothesis was rejected for $p < 0.05$. **RESULTS:** Fifteen studies were included (of 314 screened), published between 2012 and 2018 with 854 brain metastases. Preoperative SRS was delivered in 229 lesions. The 1-year LC random effects estimate was 79.1% (95% confidence interval [CI]: 55.9–95.0%; $I^2 = 80\%$) for preoperative SRS and 80.5% (95% CI: 66.3–91.5%; $I^2 = 93\%$) for postoperative SRS ($p=0.9$). Radionecrosis incidence random effects estimate was 2.1% (95% CI: 0.1–8.6%; $I^2 = 36\%$) for preoperative SRS and 6.3% (95% CI: 1.1–15.4%; $I^2 = 90\%$) for postoperative SRS ($p=0.52$). **CONCLUSIONS:** Rates of 1-year LC and RN incidence are similar after preoperative SRS as compared to postoperative SRS for large brain metastases. Results from ongoing prospective clinical trials studying preoperative SRS are important to further investigate these two techniques.

MLTI-08. AN EXCEPTIONAL INTRACRANIAL RESPONSE TO REPEAT RADIATION AND IMMUNOTHERAPY IN A PATIENT WITH METASTATIC, POORLY DIFFERENTIATED ADENOCARCINOMA OF THE LUNG

Ashley Sumrall¹, Stuart Burri¹, and Anthony Asher²; ¹Levine Cancer Institute, Charlotte, NC, USA, ²Carolina Neurosurgery and Spine Associates, Charlotte, NC, USA

We report an unusual case of a long-term survivor of metastatic, poorly differentiated adenocarcinoma of the lung (EGFR- ALK-) who developed intracranial disease after definitive treatment of a stage IIIB lung cancer. He received a complex course of RT which began with SRS to his intracranial disease in 2012 and included: brainstem (pontine) mass, left parietal mass, left frontal, left lateral temporal, and left insular lesions. The left temporal mass progressed and was resected. Subsequently, SRS was given to a right anterior frontal lesion. Additional SRS was given to progressive right superior frontal mass & left temporal tumor bed was given fractionated RT to the left temporal tumor bed. Later, he developed bilateral cerebellar masses and right-sided progression. More SRS was given to right frontal area, and then to bilateral cerebellar lesions. Surprisingly, he did well neurologically until seizures developed. His repeat biopsy was sent for NGS and noted to be PDL1+, APC mutated, and KRAS mutated. This gentleman was started on pembrolizumab in May 2016. Due to colitis, his therapy stopped in January 2017. His colitis progressed such that immunotherapy could not be restarted. Now, after observation only for the past 2.5 years, his disease has disappeared. He is doing well neurologically. We propose that the use of

radiation and immunotherapy worked to produce an exceptional, durable response.

MLTI-09. UNDERWEIGHT AND WEIGHT LOSS ARE PREDICTORS OF POOR OUTCOME IN PATIENTS WITH BRAIN METASTASIS

Michael Weller¹, Anna Lareida¹, Robert Terziev², Bettina Grossenbacher², Nicolaus Andratschke³, Patrick Roth², Sabine Rohrmann⁴, Rolf Stabel⁵, Matthias Guckenberger³, Emilie Le Rhun⁶, and Fabian Wolpert⁷; ¹Department of Neurology and Brain Tumor Center, University Hospital and University of Zurich, Zurich, Switzerland, ²Department of Neurology and Brain Tumor Center, University Hospital and University of Zurich, Zurich, Switzerland, ³Department of Radiation Oncology, University Hospital and University of Zurich, Zurich, Switzerland, ⁴Cancer Registry for the Canton of Zurich, University Hospital and University of Zurich, Zurich, Switzerland, ⁵Department of Oncology, University Hospital and University of Zurich, Zurich, Switzerland, ⁶Neuro-oncology, Department of Neurosurgery, CHU Lille, Haute-Normandie, France, ⁷Department of Neurology and Brain Tumor Center, University Hospital and University of Zurich, Switzerland

BACKGROUND: Despite increased risk of comorbidities, overweight may be associated with improved outcome in patients with metastatic cancer. Conversely, tumor cachexia has been identified as a negative predictor of outcome in patients with brain metastasis (BM) from lung cancer. Here we evaluate the association of abnormal body mass index (BMI) and weight change with outcome in patients with BM from different primary tumors. **METHODS:** Patients with a diagnosis of BM diagnosed and treated at the University Hospital Zurich ($n=703$) were assessed for associations of BMI, weight change, comorbidities and survival. **RESULTS:** Compared with patients with normal BMI of 18.5–24.9 kg/m² who experienced a median overall survival (OS) of 9 months (95% confidence interval (CI) 7.5–10.5), OS was inferior in patients with BMI < 18.5 kg/m² (OS 6 months, 95% CI 1.6–10.3, $p=0.04$), but superior in patients with BMI > 25 kg/m² (OS 13 months, 95% CI 11.0–15.0; $p=0.033$). For patients with documented weight course ($n=173$ of 703), we report a median relative weight loss of 5% within the first 6 months of BM diagnosis (95% CI 3.3–6.5). Reduction above the median was associated with an unfavorable outcome in this subgroup (weight loss $\geq 5\%$ 22.0 months, 95% CI 19.2–24.8; weight loss $< 5\%$ 14.0 months, 95% CI 11.9–16.). **CONCLUSIONS:** Despite being associated with a worse cardiovascular risk profile, high BMI is associated with preferable and underweight with poor outcome in BM patients. Conversely, weight loss above median may be a predictor of poor outcome. Future studies need to address the question whether vigorous treatment of tumor cachexia, e.g. by specific nutrition management, might improve outcome of BM patients. In contrast, regimens that are associated with weight loss such as ketogenic diet may be detrimental.

MLTI-10. ESTABLISHMENT OF A MULTIDISCIPLINARY BRAIN METASTASIS CLINIC TO FACILITATE PATIENT-CENTERED CARE AND COORDINATED RESEARCH

Jing Li, Frederick F Lang, Nandita Guha-Thakurta, Jeffrey S Weinberg, Ganesh Rao, Amy Heimberger, Sherise Ferguson, Sujit Prabhu, Raymond Sawaya, Debra N Yeboa, Mary Frances McAleer, Caroline Chung, Tina Briere, Michael Davies, John de Groot, Isabella Glitza, Rashmi K. Murthy, Jordi Rodon, Barbara O'Brien, Ecaterina Dumbrava, W. K. Alfred Yung, David Vining, Donald Schomer, Yan Wang, Dima Suki, Mark Wozny, Denise Zaebs, Wendy Austin, Alissa Nguyen, Elizabeth Burton, Suzanne Davis, and Hussein Tawbi; UT MD Anderson Cancer Center, Houston, TX, USA

BACKGROUND: ~30% cancer patients develop brain metastases (BM), reflected by ~1600 BM patients treated at MD Anderson Cancer Center annually. With advances in systemic therapy and extracranial disease control, BM is a growing challenge. Multi-disciplinary BM management is critical and complex requiring coordination of multiple oncology sub-specialties. There is limited data on pragmatic clinic models to streamline and advance care. **METHODS:** Recognizing deficiency in BM treatment and research, a steering committee was formed at MDACC to establish an interdisciplinary BM clinic (BMC), with a multi-disciplinary BM research retreat held in 2016. The goal of BMC was to centralize patient referrals, improve patient outcomes and experience, and advance research by developing clinical trials and biomarker discovery programs. Meetings were held to address BMC format, workflow, EMR integration, data collection infrastructure, and staffing model. **RESULTS:** MDACC BMC clinic opened in 01/2019 with two half-day clinics staffed by neurosurgery, neuro-radiation oncology, neuro-radiology and medical/neuro oncology. A dedicated advanced practice provider screens the referrals according to a well-developed algorithm. A multidisciplinary conference is held immediately before each clinic where patient images are reviewed, cases are discussed and consensus recommendations are developed. The treatment plan and follow up appointments are arranged at the completion of the clinic visit to expedite care.