NCOG-03. FACTORS ASSOCIATED WITH ADJACENT LEVEL TUMOR PROGRESSION IN PATIENTS RECEIVING SEPARATION SURGERY FOLLOWED BY SPINE STEREOTACTIC RADIOSURGERY FOR METASTATIC EPIDURAL SPINAL CORD COMPRESSION

Vikram Chakravarthy, Hammad Khan, Shaarada Srivatsa, Konrad Knusel, Todd Emch, Ajit Krishnaney
OUTCOME MEASURES AND NEURO-COGNITIVE OUTCOMES

NCOG-01. STEREOTACTIC RADIOSURGERY FOR BRAIN METASTASES AT THE GUY’S CANCER CENTER, LONDON: AN AUDIT FOR THE FIRST 17 MONTHS

Kalloo Bhadra1, Omar Al-Salih2, Sheila Hassan1, Angela Swapnil2, Kirsty Blythe1, Samantha FORN1, Caroline SUSODA1, and Lucy BIZARD2
1 Guy’s Cancer Center, Guy’s & St Thomas’ NHS Foundation Trust, London, United Kingdom
2 Guy’s Hospital, GKT, London, UK

INTRODUCTION: Stereotactic radiosurgery (SRS) commenced at Guy’s Cancer Hospital in August 2017. We report our first seventeen months’ data (August 2017 to December 2018) for brain metastases SRS. METHOD: Patients referred via Neuro Oncology MDT were assessed for suitability for SRS via clinical review and 1mm-slice MRI. Treatment was planned on Eclipse v15.6 and delivered using TrueBeam STx Linac(FFF) and Align RT v5.1 for matching. Dose prescription, according to departmental protocol, was set at 100% isodose, ranging from 18 Gy to 25 Gy, with fractionation varying from single to five fractions depending on factors including size, volume and locations. Post-treatment, patients were discharged back to their primary treating team for 3-monthly MRI RESULTS: Between Aug 17 to Dec-18, 70 patients with brain metastases were treated with a total of 122 lesions. Mean age was 66 years (range 37-93) and Median follow-up 9 months. Primary tumour sites mainly included lung (34/48.5%), breast (16/22.8%) and melanoma (17/24.3%). Brain-only metastases, including patients with newly diagnosed LM from different solid tumors, including breast cancer (n=46, 22.8%) and melanoma (n=51, 13.5%). Survival curves were estimated using the Kaplan-Meier method and compared by Log-rank test. RESULTS: Median age at LM diagnosis was 56.5 years (range 20-82 years). Typical clinical signs or symptoms were noted in 225 patients (88.5%); only 13 patients (5%) were clinically asymptomatic. The most common MRI subtype A was seen in 117 patients (46%). Types B (n=33, 13%), C (n=54, 21%) and D (n=50, 19.5%) were less common. Tumor cells in the CSF were observed in 186 patients (73%) whereas the CSF was equivocal in 24 (9.1%) and negative in 44 (17.5%) patients. Patients with inferior outcome than patients with probable or possible LM had inferior survival. TYPE I patients had inferior outcome than type II patients (p=0.0019). Nodular disease was a negative prognostic factor in type II LM, but not in type I LM (p=0.013). CONCLUSION: The EANO ESMO LM subtypes are highly prognostic and should be considered for stratification and overall design of clinical trials.

NCOG-02. PROGNOSTIC VALIDATION OF THE EANO ESMO CLASSIFICATION OF LEPTOMENINGEAL METASTASIS

Emilie Le Rhun1, Patrick Devos1, Johannes Weller2, Katharina Seystahl3, Francesco Mo3, Annette Boos4, Anna Sophie Berghoff5, Joost Joussen6, Fabian Wolfpert5, Roberta Ruda7, Dieta Brandsma8, Matthias Preusser9, Martin van den Bent4, Ulrich Herrlinger10, and Michael Weller11
1 University Hospital Zurich, Zurich, Switzerland
2 Lille University Hospital, Lille, France
3 Division of Clinical Neuro-Oncology, Dept. of Neurology, University Hospital Bonn, Bonn, Germany
4 Dept Neuro-Oncology, University and City of Health and Science Hospital, Turin, Italy
5 Netherlands Cancer Institute – Antoni van Leeuwenhoek, Amsterdam, Netherlands
6 Medical University of Vienna, Vienna, Austria
7 Brain Tumor Center Erlangen, University Medical Center, Erlangen, Germany
8 Department of Neuro-Oncology, University of Turin and City of Health and Science Hospital, Turin, Italy
9 Erasmus MC Cancer Institute, Rotterdam, Netherlands
10 University of Bonn, Bonn, Germany
11 Universitaetsklinikum Zurich - Klinik fu r Neurologie, Zurich, Switzerland

BACKGROUND: The EANO ESMO guidelines have proposed a classification of leptomeningeal metastases (LM) based on clinical (typical/atypical), cytological (positive/negative/equivocal) and MRI (A linear, B nodular, C linear and nodular, D normal or hydrocephalus only) presentation. Type I LM is defined by the presence of tumor cells in the cerebrospinal fluid (CSF) (confirmed LM) whereas type II LM is defined by typical clinical signs and MRI (equivocal LM). We here explored the clinical utility of these EANO ESMO LM subtypes for choice of treatment and outcome. PATIENTS AND METHODS: We retrospectively assembled data from 254 patients with newly diagnosed LM from different solid tumors, including breast cancer (n=96, 45.5%) and melanoma (n=51, 21.3%). Survival curves were estimated using the Kaplan-Meier method and compared by Log-rank test. RESULTS: Median age at LM diagnosis was 56.5 years (range 20-82 years). Typical clinical signs or symptoms were noted in 225 patients (88.5%); only 13 patients (5%) were clinically asymptomatic. The most common MRI subtype A was seen in 117 patients (46%). Types B (n=33, 13%), C (n=54, 21%) and D (n=50, 19.5%) were less common. Tumor cells in the CSF were observed in 186 patients (73%) whereas the CSF was equivocal in 24 (9.1%) and negative in 44 (17.5%) patients. Patients with inferior outcome than patients with probable or possible LM had inferior survival. TYPE I patients had inferior outcome than type II patients (p=0.0019). Nodular disease was a negative prognostic factor in type II LM, but not in type I LM (p=0.013). CONCLUSION: The EANO ESMO LM subtypes are highly prognostic and should be considered for stratification and overall design of clinical trials.

NCOG-03. FACTORS ASSOCIATED WITH ADJACENT LEVEL TUMOR PROGRESSION IN PATIENTS RECEIVING SEPARATION SURGERY FOLLOWED BY SPINE STEREOTACTIC RADIOSURGERY FOR METASTATIC SPINAL METASTASES

NCOG-04. PRETREATMENT VOLUME OF MR-DETERMINED WHITE MATTER INJURY (WMI) PREDICTS NEUROCOGNITIVE DECLINE AFTER HIPPOCAMPAL AMNEXIS

Vikram Chakraverty1,2, Hammad Khan3, Shaaraa Srvatsa4, Konrad Knusel5, Todd Emch6, and AjitKrishnaney7
1 Department of Neurosurgery, Cleveland Clinic Foundation, Cleveland, OH, USA
2 Case Western Reserve University School of Medicine, Cleveland, OH, USA
3 Department of Radiology, Cleveland Clinic Foundation, Cleveland, OH, USA

INTRODUCTION: Separation surgery followed by spine stereotactic radiosurgery (SSRS) has been shown to achieve favorable rates of local tumor control and patient-reported outcomes in patients with metastatic epidural spinal cord compression (MSCC). If left untreated, MSCC can cause severe, progressive neurological impairment, and eventual paraplegia with a median survival of 3-6 months. The present study aimed to identify factors associated with adjacent level progression and examine its impact on overall survival (OS) in this population. METHODS: This study included 39 patients who received separation surgery followed by SSRS for MSCC. Preoperative, postoperative, and post-SSRS MRIs were used to measure amount of epidural disease, amount of local bone marrow involvement, and adjacent level epidural (AEP) and osseous (AOP) progression. Factors associated with AEP and AOP were examined using the log-rank test and Cox proportional hazards modeling. RESULTS: Median OS in our cohort was 14.7 mo (2.07-96.3). AEP and AOP were observed in 4/39 (10.3%) and 16/39 (41.0%) patients at a mean of 6.1±5.4 mo and 3.5±5.3 mo post-SSRS, respectively. AEP (7.5±2.1, 17.1±0.1, p=0.014) and AOP (13.0±2.5, 12.0±0.9, p=0.0047) were each significantly associated with decreased OS. Factors associated with AEP included primary tumor histology, low-dose hypofractionated SSRS, increased time from surgery to SSRS, and greater amount of local epidural disease preoperatively (p<0.05). Factors associated with AOP included AOP included age, CT disease involvement, and adjacent level epidural infiltration by tumor pre- and postoperatively and greater amount of local epidural disease postoperatively (p<0.05). Primary tumor histology and increased time from surgery to SSRS were associated with AOP by trend (p=0.10). CONCLUSION: This study identified factors associated with adjacent level progression and shows that AEP and AOP are associated with shorter OS in patients receiving separation surgery followed by SSRS for MSCC.

Downloaded from https://academic.oup.com/neuro-oncology/article/22/Supplement_2/ii129/5960963 by guest on 16 September 2023