RT-27. THE ROLE OF SYSTEMIC THERAPY AFTER STEREOTACTIC RADIOSURGERY FOR SYNCHRONOUS BRAIN METASTASES FROM LUNG CANCER
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PURPOSE: To assess our experience with stereotactic radiosurgery (SRS) in treating synchronous brain metastases from lung cancer primaries and to analyze the prognostic significance of post-SRS systemic therapy (PSST).

MATERIALS AND METHODS: In this single-institution retrospective study, we analyzed 51 patients diagnosed with lung cancer and synchronous brain metastases (CNS disease found at onset or within 2 months of lung cancer diagnosis) who underwent LINAC-based SRS between 2007 and 2013. SRS was delivered to one lesion (range 1-5) with a median prescription dose and treatment volume of 21 Gy and 1.5 cc, respectively. Patients underwent metastectomy (25%), whole brain radiation (WBRT) (10%), or both (6%) prior to SRS while 52% received PSST. At time of SRS, 52% of patients had only pulmonary disease while 48% had distant disease. The SRS-PSST interval (SPI) was examined. Cox regression analyses were performed.

RESULTS: At a median follow-up of 6 months (1-59), the median survival was 6.2 months and the actuarial overall survival at 3, 6, 12, and 36 months was 71%, 51%, 29%, and 7%, respectively. Distant disease negatively predicted for survival (HR 2.2, 95% CI 1.0-4.6, p = 0.039) while the addition of PSST positively predicted for survival (HR 0.3, 95% CI 0.2-0.7, p = 0.003). Age, gender, race, metastectomy or WBRT prior to SRS, number of lesions, lesion size, and prescription dose were not significant. In patients receiving PSST, longer PSST duration and SPI did not impact survival.

CONCLUSION: Our results suggest the prognostic significance of PSST. Our previous work revealed longer duration of PSST and SPI > 10 days to predict for improved survival, this was not found in this subgroup of patients. This suggests that PSST has a differential impact on patients with synchronous metastases. Further investigation is warranted to elucidate the role and optimal timing of PSST in these patients.