and 342 (32.3%) were ER+. Median follow-up was 12.0 months, at the end of which 73.8% of patients were deceased. Median OS was 12.2 and 22.1 months for ER- and ER+ patients, respectively. HER2-mab usage for BCBM patients rose from 53.6% in 2013 to 71.7% in 2016. 420 BCBM patients had complete data for landmark analyses: 70.0% (n=294) received HER2-mab and 30.0% (n=126) did not, in which HER2-mab was associated with significantly improved OS in both ER- (median 22.2 months, 95%CI: 18.2–25.4; vs. 9.5 mos, 95%CI: 6.3–10.7; p=0.0001) and ER+ (median 25.7 months, 95%CI: 21.4-not reached; vs. 19.6 months, 95%CI: 11.1–35.2; p=0.02) patients. In multivariable Cox landmark analysis adjusted for ER status, age at diagnosis, extracranial disease, chemotherapy, radiotherapy, and metastasectomy; HER2-mab demonstrated significantly improved OS (hazard ratio 0.59 vs. no HER2-mab, 95%CI: 0.44–0.77; p<0.001). CONCLUSIONS: In this large, national study, HER2-mab was associated with substantially improved overall survival in BCBM patients.

75. PROGRAMMED DEATH RECEPTOR LIGAND ONE EXPRESSION MAY INDEPENDENTLY PREDICT SURVIVAL IN NON-SMALL CELL LUNG CARCINOMA BRAIN METASTASES PATIENTS RECEIVING IMMUNOTHERAPY

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BACKGROUND: Programmed death receptor ligand one (PD-L1) expression is known to predict response to PD-1/PD-L1 inhibitors in non-small cell lung cancer (NSCLC). However, the predictive role of this biomarker in brain metastases (BMs) is unknown. The aim of this study was to assess whether PD-L1 expression predicts survival in patients with NSCLC BMs treated with PD-1/PD-L1 inhibitors, after adjusting for established prognostic models. METHODS: In this multi-institutional retrospective cohort study, we identified NSCLC-BM patients treated with PD-1/PD-L1 inhibitors after local BM treatment (radiotherapy or neurosurgery) but before intracranial progression. Cox proportional hazards models were used to assess predictive value PD-L1 expression for overall survival (OS) and intracranial progression free survival (IC-PFS). RESULTS: Forty-eight BM patients with available PD-L1 expression were identified. PD-L1 expression was positive in 33 patients (69%). Median survival was 26 months. In univariable analysis, PD-L1 predicted favorable OS (HR = 0.44; 95% CI 0.19 – 1.02; p = 0.055). This effect persisted after correcting for lung-graded prognostic assessment (lung-GPA) and other identified potential confounders (HR = 0.24; 95% CI = 0.10 – 0.61; p = 0.002). Moreover, when modeled as a continuous variable, there appeared to be a proportional relationship between percentage of PD-L1 expression and survival (HR = 0.86 per 10% expression, 95% CI 0.77 – 0.98, p = 0.02). In contrast, PD-L1 expression did not predict IC-PFS in uni- or multivariable analysis (adjusted HR = 0.54, 95% CI 0.26 – 1.14, p = 0.11). CONCLUSIONS: In patients with NSCLC-BMs treated with PD-1/PD-L1 checkpoint inhibitors and local treatment, PD-L1 expression may predict OS independent of lung-GPA. IC-PFS did not show association with PD-L1 expression, although the present analysis may lack power to assess this. Larger studies are required to validate these findings.

76. THE ROLE OF FRAILTY IN PREDICTING POSTOPERATIVE SOCIOECONOMIC OUTCOMES AMONG PATIENTS WITH METASTATIC BRAIN CANCER

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BACKGROUND: Patient frailty is an important consideration in the context of providing high-value, cost-effective care, as it has shown to effectively predict postoperative morbidity and mortality in many surgical subspecialties. However, for metastatic cancer patients, there is a lack of consensus as to whether frailty effectively predicts postoperative outcomes such as survival and length of stay (LOS), specifically among patients with metastatic brain tumors. OBJECTIVE: The present study sought to determine if the 5-factor modified frailty index (mFI-5) independently predicts LOS, discharge disposition, and total hospital charges among patients with metastatic brain cancer. METHODS: Patients diagnosed with metastatic brain cancer who underwent surgery between 2017–2019 at a single academic institution were analyzed. Bivariate analysis identified patient characteristics significantly associated of LOS, discharge disposition, and total hospital charges. Multivariate linear regression was used to identify independent predictors of LOS and total hospital charges, while multivariate logistic regression was used to identify independent predictors of non-routine discharge disposition. P <0.05 was considered statistically significant. RESULTS: A total of 302 patients were included in our analysis. Our patient cohort had a mean age (standard deviation) of 62.27 11.86 years, and was majority female (52.0%) and Caucasian (74.2%). The majority of patients had a primary lung cancer (24.8%), followed by breast cancer (13.6%). There was no significant difference in mFI-5 score between patients with metastatic tumors of known origin compared to patients with metastatic tumors of unknown origin (p=0.61). In multivariate analysis, a higher mFI-5 score independently predicted longer LOS (regression coefficient [Coef]=1.36 days, p<0.001), non-routine discharge disposition (odds ratio [OR]=1.60, p=0.0079), and higher total hospital charges (Coef=$4325.54, p=0.0010). CONCLUSION: The mFI-5 independently predicts LOS, discharge disposition, and total hospital charges among our cohort of metastatic brain cancer patients. Our findings may be used to aid physicians in providing high-value neurosurgical care.