important prognostic factor that should be considered by clinicians treating BrM patients. We identify CIRBP as a functional mediator of this process.

66. CLINICAL CHARACTERISTICS AND RESULTS OF PEDIATRIC SOLID TUMORS WITH BRAIN METASTASES: EXPERIENCE FROM A SINGLE REFERRAL CANCER CENTER

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BACKGROUND: 80% of childhood cancer are located in low- and middle-income countries (LMIC). The most common form of presentation is disseminated or metastatic disease. The rate of survival has not been equitable across the world, since in these countries only 1 of 5 children are cured. OBJECTIVE: To evaluate the clinical and histopathological features of patients with metastatic pediatric solid tumors, in a single referral cancer center in Honduras. METHODS: We conducted a retrospective review of patients diagnosed with pediatric solid tumors from January 2010 to April 2020. Among the 260 patients through a collection form, we obtained: sociodemographic characteristics, clinical presentation at diagnosis, common histological subtypes, sites of metastasis, treatment and outcome at the time of follow-up. RESULTS: During the last 10 years, 260 cases of childhood cancer were referred to our center for treatment. 127 patients (48.8%), have a solid tumor, patients ranged in age from 1 to 18 years and distribution for sex were 38% for males and 62% females. At the time of initial diagnosis 40/127 (31%) have advanced disease (stages III and IV). We found brain metastases in 22/40 cases (55%), the primary cancer was localized at CNS in 13/22 (59%) and the most common extracranial tumors causing brain metastases were neuroblastoma (4/22), rhabdomyosarcoma (3/22), retinoblastoma (2/22). Currently in the follow-up there were 18/22 (82%) died and 4/22 (18%) are in treatment with palliative intent. CONCLUSION: There is a lack of information about the epidemiology of brain metastases among children with solid tumors in the low/middle income countries (LMIC) where the prognosis of metastatic disease is very poor, despite efforts, multimodal therapy and multidisciplinary management, in absence of other options like bone marrow transplantation, and reliable access to high-quality medicines. For our countries, timely diagnosis is still the main determining factor for cure.

67. INCREASED RISK OF BREAST CANCER BRAIN METASTASIS WITH EGFR AND KI-67 EXPRESSION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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PURPOSE: This study aims to conduct a systematic review of the literature to identify biomarkers associated with breast cancer brain metastasis (BCBM). METHODS: A systematic search was conducted in PubMed, Embase, Web of Science, and Cochrane for relevant literature up until October 1, 2018. Case reports, conference abstracts, and expert opinions/letters were excluded. Studies were included if they investigated risk factors for BCBM in a cohort of patients with locoregional or metastatic breast cancer of any subtype. RESULTS: From the 4866 studies that were screened, 117 were selected for inclusion and review. Twenty-eight unique biomarkers were investigated, of which three (EGFR, Ki-67, and p53) were assessed by more than two authors. In a pooled analysis of 3 studies, EGFR expression was associated with an increased risk of BM (RR 3.48, 95% CI 2.27–5.32, I^2=0%, p-interaction = 0.39, n= 571 patients). In a pooled analysis of 5 studies, increased Ki-67 expression was associated with an increased risk of BM (RR 2.91, 95% CI 1.96–4.32, I^2=59%, p-interaction = 0.05, n= 1,178). In a pooled analysis of 4 studies, p53 expression was not associated with a statistically significant risk of BM (RR 1.42, 95% CI 0.98–2.06, I^2=53%, p-interaction = 0.10, n= 738). CONCLUSION: This study summarizes the various biomarkers investigated for a role in breast cancer brain metastasis. Two biomarkers, EGFR and Ki-67 were identified as having a statistically significant increased risk of BCBM while p53 was not found to be statistically significant. Future studies are needed to develop more robust prediction models, as well as evaluate the other biomarkers identified in this study, which could help clinicians identify patients at high risk of breast cancer brain metastasis.

68. FRAMELESS, VAULT-FREE RADIOSURGERY: INITIAL CLINICAL EXPERIENCE WITH THE ZAP-X STEREOTACTIC SYSTEM

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The Zap-X is a novel self-contained and self-shielded dedicated radiosurgery system developed and manufactured by ZAP Surgical Systems, Inc. of San Carlos, California. Intended for the stereotactic radiosurgery (SRS) treatment of benign and malignant intracranial and cervical spine lesions, this gyroscopically stabilized 3 megavolt (MV) linear accelerator (LINAC) provides a unique radiosurgical alternative for selected patients. Beginning in January 2019, a total of 38 metastatic lesions in 24 patients were treated in our facility. Radiation prescription doses ranged from 1500–1900 cGy (single fraction) to 2500 cGy (five fractions), with treatment volumes ranging from .04 to 15.3 cc. Daily treatment times averaged 45 minutes or less. Target coverage, dose homogeneity, and conformality were comparable to the existing Gamma Knife, CyberKnife and LINAC-based radiosurgery treatment systems in daily use at our facility. As with other frameless radiosurgery platforms, the Zap-X proved particularly useful in situations where either surgery or single-fraction radiosurgery was considered a less desirable treatment option; or when fractionated radiosurgery was thought to be radiobiologically advantageous. All treatments were completed without complication. At two months post-treatment, all lesions showed a complete or partial response to therapy based on MRI scan. None of our patients experienced treatment-related skin reaction, cognitive deficit, fatigue or steroid dependency. Among patients who had previously undergone Gamma Knife treatment, there was a clear preference for frameless radiosurgery. In our experience, the Zap-X delivery system offers a high-precision, patient-friendly and cost-effective alternative to traditional dedicated radiosurgical platforms.

69. PERMANENT INTRACAVITARY CS131 BRACHYTHERAPY FOR PREVIOUSLY-IRRADIATED RECURRENT BRAIN METASTASES: INITIAL CLINICAL AND RADIATION SAFETY EXPERIENCE

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OBJECTIVE: Recurrence of previously-irradiated brain metastases (BrM) presents a significant challenge. We describe our initial experience using salvage resection with Cs131 brachytherapy in previously-irradiated BrM. METHODS: Between September 2019 and April 2020, 9 patients with recurrent BrM underwent maximally-safe metastatectomy. Following pathological confirmation of viable recurrence, cavities were implanted with permanent Cs131 brachytherapy (GammaTile, GT Medical Technologies). Prescribed dose was 60Gy at 5mm from the cavity. Postimplant dosimetry (V100) was calculated on postoperative day 1 fused CT/MRI. Intraoperative team exposure was recorded using intraoperative ring dosimetry, and patient dose-rates measured postoperatively informed patient, family and medical-staff exposure modeling. RESULTS: Nine patients (55% female, median age 54) underwent 10 implantations (6 supratentorial, 4 infratentorial). Median preoperative maximum diameter was 3.5cm (2.3–6.3) and histologies included breast, gastrointestinal, lung, kidney and oral cavity squamous cell carcinomas. Five had undergone prior resection or laser ablation. All lesions received >/=1 prior course of stereotactic irradiation a median of 10.1 months (3.7–15.9) earlier. Eight lesions were gross-totally resected. Median number of implanted Cs131 seeds was 16 (12–28) with median seed strength of 61.8U (42.4–98.0). Median postoperative cavity size was well-correlated with the number of implanted seeds (Pearson R=0.75, p=0.03). Median V100 dose coverage of the cavities and uniform 5mm expansion of the cavities were 99% (79–100%) and 79% (51–95%), respectively. Median measured exposure rates were 90mR/hr (28–152) on contact, 9.15mR/hr (2.7–13.9) at 30cm and 1.4mR/hr (0.6–2.3) at 1 meter from the patient. Mean ring dose was 6.83mrem (0–18) for the radiation oncologist and 9.17mrem (0–15) for the neurosurgeon. Modeled lifetime family-member and visitor exposure was 116mrem (52-193mrem), and healthcare worker exposure was 39mrem (17-64mrem), all well below regulatory limits. There were no immediate wound complications or unanticipated neurologic injuries. CONCLUSION: In our early experience, salvage interstitial Cs131 implantation was safely employed for recurrent brain metastases.

70. A PHASE 1–2 CLINICAL TRIAL OF EO1001, A NOVEL IRREVERSIBLE PAN-ERBB INHIBITOR WITH PROMISING BRAIN PENETRATION

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CNS metastasis has become a prominent driver of morbidity and mortality in recent years as new targeted therapies have improved systemic outcomes. Mutations in the ErbB family of kinases are known oncodrivers in many of these cancers. ErbB family member "crosstalk" is associated with rapid development acquired resistance to ErbB TKIs. The development of agents targeting