ABSTRACT CITATION ID: NOAE064.269
GCT-14. TREATMENT APPROACH FOR METASTATIC INTRACRANIAL GERMINOMA: A MULTI-INSTITUTIONAL EXPERIENCE
Phoebe C Power1, Kevin X Liu2, Susan N Chi1, Karen D Wright1, Karen J Marcus3, Daphne A Haas-Kogan1,4, David Ebb5, Torunn I Yock6, Shannon M MacDonald1,2, Kee Kiat Yeo1,1; 1Department of Pediatric Oncology, Dana-Farber/ Boston Children’s Cancer and Blood Disorders Center, Boston, MA, USA, 2Department of Radiation Oncology, Brigham and Women’s Hospital, Dana-Farber/ Boston Children’s Cancer and Blood Disorders Center, Boston, MA, USA, 3Department of Radiation Oncology, Massachusetts General Hospital, Boston, MA, USA, 4Department of Pediatrics, Massachusetts General Hospital, Boston, MA, USA
BACKGROUND: Germinoma is the most common CNS germ cell tumor in children. Treatment with 24 Gy craniospinal irradiation (CSI) with boost to 40 Gy alone results in excellent survival irrespective of disease stage. For localized germinoma, recent studies have demonstrated the efficacy of neoadjuvant chemotherapy in decreasing the field/dose of radiation therapy (RT) needed for cure. For metastatic germinoma however, the optimal RT approach when combined with chemotherapy is unclear. Herein, we present our experience in treating patients with metastatic germinoma. METHODS: We performed a retrospective, IRB-approved study of patients with metastatic germinoma diagnosed between 2001-2023 at Boston Children’s Hospital, Dana-Farber Cancer Institute, Brigham and Women’s Hospital, and Mass General Hospital. Clinical features, treatment plan, and outcomes were collected and analyzed using the Kaplan-Meier method and Fisher’s exact test. RESULTS: Twenty-eight patients with metastatic germinoma were identified. Median age at diagnosis was 15.9 years (range: 6.2-25.9). Metastasis was intracranial in 20, craniospinal in three and CSF-only in five patients. Six patients received CSI only. Twenty-two patients received neoadjuvant chemotherapy and CSI. Median number of chemotherapy cycles was 4 (range: 3-6). Seventeen patients had complete response, four patients had partial response, and one patient had progressive disease with chemotherapy. All patients went on to receive CSI, with median dose of 21 Gy (range: 18-36 Gy) with median IF boost to 36 Gy (range: 30-51.6 Gy). Median duration of follow-up was 11 years (range: 0.3-25.3). There were no recurrences or deaths within the cohort. Analysis of long-term outcomes data revealed no significant differences in frequency of endocrinopathies, CNS vasculopathies, or memory loss between the doses of RT. CONCLUSIONS: Our data show that neoadjuvant chemotherapy followed by CSI is associated with excellent overall survival in patients with metastatic germinoma. Importantly, our experience suggests that in combination with neoadjuvant chemotherapy, 21 Gy CSI may be sufficient as a curative dose in this patient population.