received WBRT plus boost, and 17 patients received CSI plus boost. After a median follow-up of 83 months (range, 13 to 214 months), 15 patients relapsed in FR group, 4 in WBRT group and 0 in CSI group. The 5-year DFS was 74.3%, 97.2%, and 100%, respectively (p<0.001). Among 15 patients who relapsed after FR, 14 had positive radiological findings, in which 6 (42.8%) had lesions documented at the periventricular area, and 7 (50.0%) in the frontal lobe. HRQOL data were available in 69 patients, which generally scored low. In 38 patients evaluated by SF-36, those receiving CSI had significantly lower mental component scores than those receiving WBRT (p=0.027) or FR (p=0.011). CONCLUSIONS: Patients with localized BG germinoma present a unique relapse pattern. WBRT, which covers at-risk areas, showed both better disease control and HRQOL.

GCT-25. INNOVATIVE, INTENSIVE IRRADIATION-AVOIDING/ MINIMIZING CHEMOTHERAPY FOR HIGH-RISK PRIMARY CENTRAL NERVOUS SYSTEM (CNS) MIXED MALIGNANT GERM CELL TUMORS (HR-MMGCT): A PILOT STUDY AND PROPOSED MULTI-NATIONAL PROSPECTIVE TRIAL

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BACKGROUND: About one-third of children with primary CNS MMGCT experience incomplete responses to initial induction chemotherapy prior to irradiation, many of whom will subsequently relapse. Such high-risk patients are variably defined as having initial alpha-fetoprotein (AFP) elevations exceeding 1,000ng/mL, predominant histopathologies of malignant non-germinomatous GCT and incomplete responses to induction chemotherapy. Drugs targeting GCT-specific molecular markers have been identified for non-germinomatous GCT elements but have yet to be incorporated into prospective clinical trials. Four children with clearly identified HR-MMGCT characteristics have been treated on an innovative pilot regimen incorporating intensified chemotherapy and molecularly targeted agents, with avoidance or minimization of irradiation. METHODS: Four children (two with pure suprasellar embryonal carcinoma (EC) - one with Down syndrome and the other with pre-diagnosis cognitive dysfunction; one with initial serum AFP exceeding 7,000ng/mL and yolk sac tumor (YST)+EC+Teratoma pathology; one with initial serum AFP exceeding 1,000ng/mL) were treated with 3 cycles of "standard" induction chemotherapy (ACNS1123), followed by 1–3 transplant cycles (thiotepa/carboplatin) each with complete radiographic and tumor marker responses. Two children with pure EC subsequently received six cycles of brentuximab-vedotin without irradiation and remain disease-free off therapy for 2–4 years. One child with YST+EC+Teratoma has subsequently received reduced dose craniospinal irradiation and pineal region boost, and will receive oral everolimus, erlotinib, palbocyclib and intravenous brentuximab-vedotin. The fourth child with YST+MT will commence everolimus, erlotinib and palbocyclib without irradiation. CONCLUSION: This treatment strategy for HR-MMGCT patients provides preliminary tolerance and response data justifying extension to a multi-center trial.

GCT-26. PROGNOSTIC FACTORS IN PATIENTS WITH BASAL GANGLIA GERM-CELL TUMORS: A RETROSPECTIVE ANALYSIS OF THE SINGLE CHINESE INSTITUTE EXPERIENCE FROM 2009 TO 2019

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OBJECTIVE: To evaluate the clinical factors related to the prognosis of basal ganglia germ cell tumors. METHODS: A retrospective analysis of 52 cases of the basal ganglia germ cell tumors treated from January 2009 to January 2019 in the department of oncology of Guangdong Sanjiu Brain Hospital. The median age: 12 years (range: 5–32), The median course of disease: 11.7 months (range: 1–54). Thirteen cases were diagnosed by biopsy and 39 cases were diagnosed by elevated tumor markers. There were 31 patients (59.6%) diagnosed with germinomas and 21 patients (40.4%) with non-germ germ cell tumors. Univariate and multivariate survival analysis was performed. RESULTS: To October 15, 2019, the median follow-up time was 30.4 months (range 2–124 months). The 5-year survival rate was 85%, and the 5-year progression-free survival rate was 84%. Multivariate analysis found whether serum AFP was greater than 100mIU / ml, (with HR: 11.441,95% CI: 2.09–47.66, P = 0.005),the degree of surgical resection(with HR 5.323 (1.19–23.812), P = 0.029), PD as the effect of radiotherapy (HR: 16.53, (1.19–23.81), P = 0.001) were independent prognostic factor affecting survival. CONCLUSION: The pathological type, degree of surgical resection, and response to initial treatment can all affect survival.

GCT-27. CLINICAL FEATURES AND PROGNOSTIC FACTORS OF NONGERMINOMATOUS GERM CELL TUMORS IN 111 CONSECUTIVE PATIENTS IN A SINGLE INSTITUTION: IMPACT OF IRRADIATION AND CHEMOTHERAPY CYCLES ON SURVIVAL

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BACKGROUND: Limited data is available in intracranial nongerminomatous germ cell tumors (NGGCTs) in Chinese population. Here we aimed to retrospectively assess the clinical-pathological and prognostic factors of NGGCTs in a single large institution in China. METHODS: From June 2003 to December 2018, 111 consecutive NGGCTs were treated in Guangdong Sanjiu Brain Hospital, China. RESULTS: The median follow-up was 36.2 months (range, 1.2 to 131.2 months). Three-year EFS and OS for 111 NGGCTs patients were 78.5%±4.5% and 82.8%±4.0%, respectively. 98 patients received CSI plus boost yielded better survival than those who received reduced-volume radiotherapy or no radiotherapy (3y OS, 86.7% vs. 51.4%, p=0.007). Patients had at least four cycles of chemotherapy were strongly associated with improved 3-year OS, compared to those received less than 4 cycles (94.1% vs. 63.6%, $p < 0.001$). There was no significant difference in survival of patients stratified by age, surgery, hydrocephalus, as well as tumor diameter. Multivariate analysis identified chemotherapy cycles less than 4 was the only prognostic factor that conferring a worse OS (p=0.003). Patients both received CSI and at least 4 courses of chemotherapy were correlated with lower incidence of relapse (p=0.044). CONCLUSIONS: Multimodal approach including CSI and enough courses of chemotherapy was effective and should be recommended for the treatment of newly diagnosed NGGCTs in Chinese population.

GCT-28. RECURRENCE PATTERN AND SURVIVAL FOR RELAPSED INTRACRANIAL NON-GERMINOMATOUS GERM CELL TUMORS: A SINGLE-INSTITUTION EXPERIENCE

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PURPOSE: Intracranial non-germinomatous germ cell tumors (NGGCTs) have lower overall survival than germinoma because relatively higher recurrence usually occurs after first line therapy. METHODS: Between January 2003 and December 2018, 111 consecutive patients diagnosed with NGGCTs reviewed. Those who progressed after first line therapy were included in this study. Data of first line treatment, salvage treatment, clinicopathological features and survival were collected and analyzed. RESULTS: Totally, thirty patients (30/111, 27.0%) relapsed in our cohort, including 19 patients with accurate relapse information detail, and 11 patients who died of disease progression during follow up but without exact time and site of relapse. The median OS from diagnosis of the disease was 49.2 months (95% CI: 14.1 to 84.3 months) and 3-year OS was 54.3%. Patients who received both CSI and chemotherapy relapsed less than those who received reduced volume of radiotherapy or only CSI or only chemotherapy (22.5% vs. 45.5%, p=0.034). Of 19 patients who had detail information of recurrence time and site, the median time from diagnosis of disease to relapse was 9.5 months (2.2 to 72.1 months). Regarding to recurrence site, most patients relapsed in primary site (10/19, 52.6%) or distant intracranial (6/19, 31.6%). The recurrence site of other 3 patients were spinal (n=1), ventricular (n=1) and peritoneal (n=1). CONCLUSION: Protracted follow-up is recommended because late recurrence is not uncommon. Primary tumor site and distant intracranial are the most prevalent relapsed location. Patients who relapsed could benefited from both CSI and salvage chemotherapy.

GCT-29. DOES TUMOUR MARKER DECLINE PREDICT OUTCOME IN INTRACRANIAL NON-GERMINOMATOUS GERM CELL TUMOURS (NGGCTS)?

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