Abstracts

PNR-17. HIGH-DOSE CHEMOTHERAPY WITH STEM CELL TRANSPLANT TO DELAY RADIATION IN PEDIATRIC EMBRYONAL BRAIN TUMOR PATIENTS

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PURPOSE/OBJECTIVES: Pediatric embryonal brain tumor patients treated with craniospinal irradiation (CSI) are at risk for neurocognitive, endocrine and growth defects with greater severity in younger patients. The purpose of this study was to determine the efficacy of high-dose chemotherapy with stem cell transplant to delay CSI in pediatric brain tumor patients.

MATERIALS/METHODS: 201 patients treated for medulloblastoma (72%), sPNET (18%) or pineoblastoma (10%) were retrospectively identified. Progression free survival (PFS) and overall survival (OS) were estimated using the Kaplan-Meier method and compared by log-rank tests. Regression analyses were used to examine the relationships between PFS or OS and patient age, tumor type, metastases, extent of resection and adjuvant therapy.

RESULTS: Twenty-seven percent of patients had neuraxis metastases, all patients underwent surgical resection, and gross total resection (GTR) was achieved for 67% of cases. Adjuvant craniospinal chemoradiation regimens were used for 56% of patients (“upfront-CSI”). High-dose chemotherapy and stem cell transplant where used for 35% of patients (“delayed-CSI”). Median age was greater in the upfront-CSI group (7.8 years vs 2.9 years; P < 0.0001). There were no differences in CSI dose, metastasis, or extent of resection according to adjuvant regimen. Median follow-up was 5.4 years. Overall PFS and OS were 70% and 69%, respectively. Adjuvant treatment regimen was not predictive for PFS or OS by log-rank tests (PFS: 74% vs 70%, P = 0.12; OS: 74% vs 69%, P = 0.13) or regression analysis.

CONCLUSIONS: Outcomes with adjuvant high-dose chemotherapy and stem cell transplant are comparable to adjuvant craniospinal chemoradiation in select pediatric embryonal brain tumor patients.