AT-07. SUCCESSFUL TREATMENT OF ATRT PATIENTS WITHOUT ADJUVANT RADIATION: A MULTI-INSTITUTIONAL CANADIAN EXPERIENCE

Dennis Ku1, Lucie Lafay-Cousin2, Chris Fryer2, Juliette Hukin2, Doug Strother3, Annie Huang1, and Eric Bouffet1; 1The Hospital for Sick Children, Toronto, ON, Canada; 2BC Children Hospital, Vancouver, BC, Canada; 3Alberta Children’s Hospital, Calgary, AB, Canada

BACKGROUND: While radiation has been included in most of the recent multimodality strategies to treat ATRT patients, concerns of significant neurocognitive deficit in very young children has led some pediatric neurooncologists to avoid the use of systematic adjuvant radiation. We present here a multiinstitutional Canadian experience. RESULTS: From 2001 to 2013, 26 patients from 3 Canadian centers (Calgary, Toronto, Vancouver), diagnosed with ATRT were treated with high dose chemotherapy strategy with the intent to delay or avoid radiation. There were 16 females and 10 males. The median age at diagnosis was 21.2 months (4.2-110.2). Fourteen patients had a supratentorial tumor and 8 were metastatic at diagnosis (1M1, 3M2, 1M2/M3, 1 M2/MRT). Fifteen achieved gross total resection (3 underwent second look surgery). Ten patients received additional triple IT chemotherapy. Five of the 16 patients tested had evidence of INI1 germline mutation. Conditioning regimen for consolidation consisted in 1 cycle of (Carbo/VP16/Thiotepa) in 6 patients, 3 cycles of (Carbo/Thiotepa) in 19 and 4 cycles of (CPM/CDDP/VP16) in 1 patient. Ten patient received maintenance therapy with Tamoxifen and Cs retinoic acid following high dose chemotherapy. Only 6/26 (23%) patients received radiation, all in an adjuvant setting. Radiation consisted in focal radiation in 4 and craniospinal irradiation in 2 patients. Eleven patients relapsed. Ten patients died of disease, one of treatment related toxicity. At a median time of 53.8 months, 15 patients (57.6%) are alive with 11 (73.3%) of them who did not received radiation. CONCLUSION: Although there is still a lack of molecular or genetic marker that allows identification of patients with ATRT who can be spared upfront radiation, our experience describes an interesting survival rate for patients with ATRT in the absence of adjuvant radiation. Upcoming molecular classification in ATRT should help delineating indication of radiation.