We developed an orthotopic CHLA-06.ffLuc xenograft model. We tested CAR-NK cells. We verified B7-H3 expression in a panel of AT/RT cell lines, NK cells also have a lower risk of inflammatory toxicity and graft-versus-CAR-NK cells have several advantages over CAR-T cells. NK cells can be a dire need for new safe and effective therapies. These therapy-resistant Teratoid/Rhabdoid Tumors in Vitro and in Vivo

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Megan Raabe 1, Sachiv Choe 2, Sam Chakravarti 3, Andrey Vorri 4, Chi Hoving 5, Michael J Fisher 3, Susan Chi 1, 2, Division of Oncology, Children’s Hospital of Philadelphia, Philadelphia, PA, USA, 2Department of Pediatrics, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA, 3Dana Farber/Boston Children’s Cancer and Blood Disorder Center, Boston, MA, USA, 4Department of Pediatrics, Harvard Medical School, Boston, MA, USA, 5Kids Cancer Centre, Sydney Children’s Hospital, Randwick, NSW, Australia, 6School of Clinical Medicine, UNSW Medicine & Health, UNSW Sydney, Sydney, NSW, Australia, 7Division of Oncology, Valley Children Hospital, Madera, CA, USA, 8Department of Biostatistics, Epidemiology and Informatics, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA

BACKGROUND: IRS-III-based chemotherapy is a long-standing treatment approach for ATRT, which mostly affects infants under the age of 3. We provide long-term outcomes from three high-volume pediatric centers, including a subgroup of patients treated with “moderately-delayed” radiation therapy (RT). METHODS: We performed a retrospective analysis of 60 patients treated between 1999-2021. Patients at Boston and Sydney Children’s Hospitals received per-protocol early chemoradiation during induction cycles 3-4, while patients at Children’s Hospital of Philadelphia received moderately-delayed RT with temozolomide post 6 induction cycles. Demographic, clinical and outcome data were collected. RESULTS: Median age at diagnosis was 2.5 years (range:0.5-19.5) with median follow-up 2.7 years (range:0.1-15.5); however, 20/60 patients were followed > 5 years (median 10.4, range:5.1-15.5). Thirty-six patients (60%) underwent gross or near-total resection; 14 (23%) had metastatic disease. Seventeen (28%) did not receive RT due to progression, toxicity, or provider discretion; 27 (45%) received focal and 17 (28%) craniospinal RT. For the entire cohort, 5- and 10-year PFS were both 30% (95%CI: 19-42), OS were 38% (95%CI: 27-51) and 31% (95%CI: 19-43), respectively. For patients with localized disease, 5-year PFS and OS were 38% (95%CI: 24-52) and 45% (95%CI: 30-56), respectively. Patients with metastatic disease had 5-year PFS and OS of 0% and 19% (95%CI: 3-43), with no long-term survivors. In multivariate analysis, RT was a statistically significant prognostic factor. However, treatment field (focal vs. CSI), RT timing (early vs. moderately-delayed), patient age, resection extent, or metastatic status were not significant. CONCLUSIONS: Our results suggest that IRS-III should remain a standard of care approach for localized ATRT, based on the favorable survival outcomes with the longest follow up of any published ATRT regimen to date. In addition, it highlights the importance of RT for localized disease and proposes it can be given after induction without compromising outcomes, reducing treatment-related toxicity.