multicohort KEYNOTE-158 (NCT02628067) study. We report outcomes with pembrolizumab in patients with MSH-H/dMMR recurrent glioma enrolled in KEYNOTE-158. METHODS: Adults with MSH-H/dMMR recurrent glioma or refractory disease per RECIST v1.1 or ECOG PS ≥1, and tumor sample for biomarker analysis were eligible for cohort k (any MSH-H/ dMMR advanced solid tumor, except colorectal cancer; local, prospective determination of MSH-H/dMMR status by PCR and/or IHC). Patients received a single dose of pembrolizumab (200 mg Q4W) until PD, disease progression, unacceptable AEs (clinically stable patients could continue treatment until PD confirmed after ≥ 4 weeks). Primary endpoint was ORR per RECIST v1.1 by independent central review. RESULTS: Among 21 enrolled patients, and the triple combination did not significantly improve survival compared with pembrolizumab monotherapy. Secondary endpoints included toxicity and OS. CONCLUSIONS: The triple combination demonstrated acceptable toxicity and promising efficacy in nGdGBM. Survival and molecular data will be updated.

CTIM-06. EVALUATING THE ASSOCIATION BETWEEN PERIPHERAL BLOOD IMMUNOLOGIC RESPONSE AND THERAPEUTIC RESPONSE IN PATIENTS WITH NEWLY DIAGNOSED GLIOBLASTOMA AND GLIOSARCOMA.

Matthew Watowich1, Nasir Yaghchi2, Nicole Bricom3, Susie Ahn4, Kylee Wulff2, Karen Pesik2, Dongjiang Chen2, Ashley Chao5, yasmeen Rauf2, Glen Stevens2, Erin Murphy2, Samuel Cho1, Jennifer Yu2, John Sul4, and David Deleyrolle1. 1Neuro-Oncology Branch, National Cancer Institute, Bethesda, MD, USA, 2University of Florida, Gainesville, FL, USA, 3Institutes of Health, National Cancer Institute, Bethesda, MD, USA, 4Neuro-Oncology Branch, National Cancer Institute, Bethesda, MD, USA, 5National Institutes of Health, National Cancer Institute (NCI), Center for Cancer Research (CCR), Neuro-Oncology Branch (NOB), Washington, DC, USA, 6National Institutes of Health, National Cancer Institute (NCI), Center for Cancer Research (CCR), Neuro-Oncology Branch (NOB), Bethesda, MD, USA, 7National Institutes of Health, National Cancer Institute, National Institutes of Health, Bethesda, MD, USA

Immune checkpoint inhibition (ICI) has failed to demonstrate significant efficacy in glioblastoma. With the underlying hypothesis that generation of an immune response in peripheral is necessary for a brain tumor to be targeted, we are enrolling patients with newly diagnosed glioblastoma on an ICI immunotherapy clinical trial with longitudinal monitoring of immune function. The purpose of this work is to improve patient selectivity for response to ICI treatment by identifying peripheral immunologic response via immunophenotyping and functional analyses. Currently, 10 of a planned 48 patients have been treated with combination nivolumab and ipilimumab (NCI-21-C-001S). We analyzed blood samples of the first two patients, from pretreatment through cycle 3 of combination ICI to confirm methods used in this clinical trial. Longitudinal evaluation of immunologic response using comprehensive flow cytometry and ELISPOT analysis was completed. In this preclinical cohort, patients demonstrated acceptable toxicity and promising efficacy in nGdGBM. Survival and molecular data will be updated.

CTIM-07. PHASE II RANDOMIZED, BLINDED, PLACEBO-CONTROLLED TRIAL TESTING P665 CMV MRNA DENDRITIC CELL VACCINE AND TETANUS-DIPHTHERIA TOXOID FOR NEWLY DIAGNOSED GBM (ATTAC II, NCT02465268).

Maryam Rahman1, Ashley Ghaesheddin2, Phuong Deleyrolle1, Katherine B. Peters3, Gary Archer4, John Sampson4, and Duane Mitchell4, 1University of Florida, Gainesville, FL, USA, 2The Preston Robert Tisch Brain Tumor Center, Duke University Medical Center, Durham, NC, USA, 3University of Florida, Gainesville, FL, USA, 4Brain Tumor Immunotherapy Programs Duke cancer institute, Durham, NC, USA

INTRODUCTION. Immunotherapy is limited in efficacy for glioblastoma (GBM). The objective of this study was to evaluate the efficacy and immune effects of the p665 mRNA dendritic cell (DC) vaccine with
under transcriptional control of the Nestin glioma-specific promoter. We completed a phase 1 sequential dose-escalation trial of CAN-3110 in recurrent high-grade glioma (rHGG). METHODS: CAN-3110 was injected intratumorally starting at 1x10^5 pfu, dose-escalated by half log up to 1x10^10 pfu in biopsy confirmed rHGG. An expansion cohort of 12 patients was then accrued at 1x10^8 pfu, blood and post-injection rHGG were collected. RESULTS: 41 rHGG patients were treated, 17 patients had separate interventions; median age 56 years (range 27-74); 21 females, 20 males; median baseline KPS 90 (range 70-100). CAN-3110 administration was well-tolerated with no dose limiting toxicities. Median overall survival (mOS) was 11.9 months. Histologic and molecular analyses showed significantly increased m cell infiltration in treatment samples with elevated T cell and/or B cell receptor (TCR/BCR) transcripts which correlated with patient survival (HR 0.26 for patients with elevated TCR/ BCR rearrangements as compared to patients with low). Volumetric analyses of MRI suggest a trend between reduction in the relative change in tumor volume and OS. CONCLUSION: The association of increased TCR/BCR transcripts with survival suggests that CAN-3110 induces T cell responses against rHGG, supporting further clinical development of CAN-3110 viral immunotherapy.

CTIM-10. A PHASE II STUDY OF RETIFANLIMAB (PD-1 INHIBITOR) IN COMBINATION WITH BEVACIZUMAB AND HYPOFRACTIONATED RADIOThERAPY FOR RECURRENT GLIOBLASTOMA: NCT03532295

The recurrence rate for glioblastomas is essentially 100% and median overall survival (OS) for recurrent glioblastoma patients is usually poor, approximately 6-8 months from first recurrence. There is an unmet need in recurrent glioblastoma for novel therapeutic options with favorable safety profiles and potentially longer OS.

PURPOSE: The goal was to assess the impact of treating recurrent Glioblastoma patients whose tumors harbor loss of CDKN2A and/or CDKN2B, and particularly those with amplifications of CDK4 and/or CDK6, with dual therapy of Abemaciclib with Bevacizumab.

METHODS: This was a single institution, pilot study (N = 10) of recurrent glioblastoma patients given the combination of Abemaciclib with Bevacizumab. Study patients received the combination of Abemaciclib at 150 mg po bid daily along with intravenous Bevacizumab at 10 mg/kg every 2 weeks within a 28-day cycle. Stage brain MRIs with contrast were obtained every 8 weeks. Trial patients were removed from the study due to failure to produce DC vaccines that met QA/QC release criteria.

RESULTS: A total of 10 patients were enrolled in the study. Here, we describe patients initially evaluable for safety followed by the additional 7 patients meeting clinical accrual from Jan, 2020-Sept, 2021. A total of 9 patients received at least one cycle (M = 6, F = 3), Preliminary findings revealed a median PFS of 14 weeks (range 5 weeks-25 weeks) and median OS of 20 weeks (range 5-70 weeks).

CONCLUSIONS: Administration of CAN-3110 into rHGG was well tolerated. OS of CAN-3110 treated subjects compare favorably to historical controls. The association of increased TCR/BCR transcripts with survival suggests that CAN-3110 induces T cell responses against rHGG, supporting further clinical development of CAN-3110 viral immunotherapy.