Abstracts

Francisco, San Francisco, CA, USA; Children’s Hospital Zurich, Zurich, Switzerland; 1 National Cancer Institute, Center for Cancer Research, Bethesda, MD, USA; 2 NYU Langone Health, New York, NY, USA; 3 National Cancer Institute, Bethesda, MD, USA; 4 Ann & Robert H. Lurie Children’s Hospital of Chicago, Chicago, IL, USA; 5 Cincinnati Children’s, Cincinnati, OH, USA; 6 The University of Chicago, Dept. of Pediatrics, Chicago, IL, USA; 7 Johns Hopkins University School of Medicine, Baltimore, MD, USA; 8 Dana-Farber / Harvard Cancer Center, Boston, MA, USA; 9 The University of Alabama, School of Public Health, Birmingham, AL, USA; 10 Children’s Hospital of Philadelphia, Philadelphia, PA, USA

BACKGROUND: Plexiform neurofibromas (PNs) can cause significant morbidity. In this phase 2 study, we assessed imaging and functional outcomes to the MEK-inhibitor Binimetinib in pediatric patients with PNs. METHODS: Children (age 1–17 years) with PN that were progressive or evaluable for significant morbidity were eligible. Binimetinib was dosed twice-daily (starting dose of 32mg/m²) for maximum of 24 four-week courses. Participants with partial response (PR; ≥20% decrease in PN volume on central MRI review) at cycle 12 may stay on therapy. Participants undergo MRI and functional assessments at baseline and after courses 4, 8, 12, 16 and 24. Functional assessments are based on PN location. RESULTS: Here we present 1-year response data. Twenty participants (55% male) with median age 12 years (range 2–16 years) enrolled; 19 are evaluable for response. Median baseline tumor volume was 326 ml (range, 8–6661 ml). Fourteen participants (74%) met criteria for PR, with 11 achieving PR by course 5. Median maximal PN volume reduction was 25.3% (range, 9–54%). As of August 2020, 14 participants received at least 12 cycles of Binimetinib; 10 remain on treatment. Study reasons include treatment associated toxicities (n=2), subject withdrawal (n=2), non-compliance (n=2), prolonged treatment delay (n=1), and lack of response (n=3). Thirteen participants underwent dose reduction. Institution-reported related grade 3 toxicities included dry skin (n=3), fatigue (n=2), muscle weakness (n=2), and diarrhea (n=2). CONCLUSIONS: Binimetinib appears reasonably well-tolerated and shows promising activity in children with NF1-associated PNs. Outcomes on functional improvement will be reported at the meeting.

NFB-18. IMMUNE FUNCTION IN CHILDREN TREATED WITH TRAMETINIB

Perla Moukhaiber, Anna Samolej, Palita Somsiri, and Geoffrey McCowage; Children’s Hospital at Westmead, Sydney, NSW, Australia

BACKGROUND: Trametinib (Tr) has been applied in the treatment of children with various tumor types, often for prolonged periods. Little is known regarding immune function (IF) following prolonged Tr in this age group. OBJECTIVE: Describe laboratory measures of IF in children on Tr. METHODS: Patients receiving Tr had low grade glioma with BRAF activating mutations. Tr was used as an alternate therapy for patients with difficulties an alternative therapy. IF was evaluated using leukocyte/lymphocyte counts, immunoglobulin levels, and antibody titres. RESULTS: 22 patients received Tr. 2 patients received Dabrafenib. Median age at initiation of Tr was 7.7 years. As of June 2020, 7 patients have had IF; results are pending on 15. Median duration of Tr therapy at time of IF was 3.5 years (0.8 – 4). In these 7 patients, median white cell count was 6.9 x 10⁹/L (4.1 – 12.6), neutrophils 4.2 x 10⁹/L (1.8 – 6.8) and lymphocytes 3.2 x 10⁹/L (1.4 – 7). IgG levels, B cells and CD8 cytotoxic T cells were normal across 7/7 patients. CD4 cell counts were normal in 6/7 patients (median 9.47 G/L (8.62 – 17), 0.51 x 10⁹/L (0.2 – 1.26) and 0.58 x 10⁹/L (0.25 – 2.03) respectively. CD3 and CD4 T cells: median 2.08 x 10⁹/L (0.67 – 4.62) and 1.34 x 10⁹/L (0.35 – 2.31), borderline low in 1 heavily pre-treated patient. An adequate immune response was present in all 4 vaccine antigens tested in 5/5 patients. CONCLUSION: IF appears relatively intact, relevant for immunisation and infection precautions in children on Tr. Data on the complete cohort will be presented.

NURSING/PATIENT CARE

NURS-01. INTRACEREBROVENTRICULAR DRUG ADMINISTRATION FOR TREATMENT OF PEDIATRIC BRAIN TUMORS

Caroline Fitzgerald and Kathryn Matson; Boston Children’s Hospital, Boston, MA, USA

Intrathecal (IT) chemotherapy, given via lumbar puncture (LP) or an intracerebroventricular (ICV) device has become a safe and effective way to deliver chemotherapy into the cerebrospinal fluid (CSF) space. The blood brain barrier makes treating tumors with CSF dissemination difficult with systemic chemotherapy alone. IT chemotherapy is often necessary for tumors which disseminate into the CSF space. Meeting intravenous access in children with cancer and choroid plexus carcinomas. It is also used for relapsed or recurrent tumors. Giving IT chemotherapy via an ICV device instead of via an LP can be preferable as it requires no deep sedation and allows for more uniform drug distribution. Drugs given IT include methotrexate, cytarabine, hydrocortisone, etoposide, and topotecan. ICV devices can be placed in patients with adequate CSF flow and a flow study can be done if needed to confirm access. Accessing the ICV device for administration of chemotherapy is typically done by a neurosurgeon or nurse practitioner. Intracerebroventricular, bilevel sterile technique, has had success using music therapy and child life specialists for assistance with coping during the procedure as patients are awake. The procedure has few complications the most common being infection usually with skin flora. It can also cause nausea and headache. There are few long term risks.

NURS-02. CLINICAL MANAGEMENT OF PATIENTS RECEIVING CAR T CELL THERAPY FOR CNS TUMORS

Susan Holtzclaw, and Corrine Hoepner; Seattle Children’s Hospital, Seattle, WA, USA

Chimeric antigen receptor (CAR) T cells are an innovative new therapy with proven efficacy in some pediatric cancers such as leukemia and lymphoma, but much less experience in solid tumors, especially tumors of the central nervous system (CNS). Seattle Children’s has three open Phase 1 CAR T cell studies (BrainChild-01, -02, and -03 targeting HER2, EGFR, and B7-H3, respectively) for recurrent/refractory CNS tumors and DIPG (BrainChild-03 only). As of December 2019, four patients have been treated at Seattle Children’s Hospital with CAR T cells infused on a weekly schedule through indwelling catheters into the tumor resection cavity or ventricular system. Given the scrutiny of modality and care needed for these patients, we now have access to a dedicated team of specialists who are able to report detailed clinical information that we have learned during the treatment of these patients. Clinical care includes the judicious use of steroids, the clinical support of patient’s symptoms pre- and post-infusion, and the management of persistent edema. We will also discuss the psychosocial support needed for families who travel long distances to receive this therapy compounded by the many emotional components of being enrolled on any Phase 1 trial. Case studies and experience from a Nurse Practitioner role will be provided and discussed.

NURS-03. DEVELOPMENT OF A PATIENT-HELD TREATMENT SUMMARY FOR PEDIATRIC CNS TUMOR PATIENTS

Rachel McAndrew, Bernardine Willis, Mark Rosenberg, and Jo Phillips; NHS Lothian, Edinburgh, Scotland, United Kingdom

BACKGROUND: Following the Scottish Government Cancer Plan 2012–15/16 ‘End of Treatment’ summaries for paediatric oncology patients treated in SE Scotland have been successfully implemented. However, it became evident that the particular needs of patients with CNS tumours were not adequately captured on the standardised documentation. METHODS: In view of these difficulties an alternative document was prepared specifically for this patient cohort by the multi-disciplinary team, including Nurse Specialists, Paediatric Neuro-oncology and Neuro-psychotherapy. This was designed to be a flexible, fluid summary to be used for all such patients regardless of tumour grade or treatment modality and included these sequelae and specific ongoing sequelae and details of red flag symptoms to alert patients and health professionals to the potential of relapse or other associated significant health problems. These treatment summaries are currently being piloted and have been well received thus far. They will be fully audited in due course with the aim to use nationally throughout Scotland in future.

NURS-04. COMBINATION OF NEURO-ONCOLOGY AND DERMATOLOGY CLINICS IMPROVE THE MANAGEMENT AND KNOWLEDGE OF SKIN-RELATED TOXICITIES WITH MEK AND BRAF TARGETED THERAPY

Tara McKown, Irene Lara-Corrales, and Andrea Cote; Hospital for Sick Children, Toronto, ON, Canada

BACKGROUND: The recent advancement in treating pediatric low grade glioma has led to upfront use of MEK and BRAF (MAPK) inhibitor therapy. At the Hospital for Sick Children we are the National leaders in treating pediatric oncology diagnosis with MAPK therapies. DESIGN: After treating several patients on MAPK inhibitors with various degrees of skin toxicity, we found we had poor and inconsistent access to dermatology services and as oncology practitioners had limited front-line knowledge about skin management. It was determined that a more formalized expertise and time with dermatology was needed. In 2018, in combination with the derma-
Abstracts

NURS-06. NURSING PROFESSIONALS AND THEIR AID IN RESEARCH BIOBANKING

Lauren Hancock, and Madhuri Kambhampati; Children's National Hospital, Washington, DC, USA

Nursing teams play an integral role in the care of patients with brain tumors; however nurses do not often see themselves as essential contributors to translational research. Recent developments in nurse-researcher relationships and involvement of the multidisciplinary team have led to successful biobanking strategies. Though there are challenges associated with fostering these relationships, their vital role has significantly enhanced participant recruitment, facilitated specimen collection at all levels, and improved the research agenda. Researchers at the institution have established a biobank to collect samples from pediatric brain tumor patients at diagnosis, during therapy, and post mortem using conventional methods. However, a collaborative environment between nursing and research teams greatly enhanced the growth of the biobank. We have increased patient recruitment by more than 50% in the past four years and supported different types of specimen collection. Our success entails: 1) development of nurse-researcher relationships, 2) an electronic consents process, 3) streamlined sample collection, and 4) hospital appreciation of the vital role of the nursing team in clinical data collection pertinent to molecular analysis. Additionally, the support of nursing is valuable during post mortem consents and provides emotional support to the family to fulfill their wish to donate. Nurses play a major role in coordination of the post-mortem donation process, and assist in the formation of partnerships within the community to promote this opportunity to families. As biobanking continues to be an important part of bench research, all institutions should recognize and support the vital role that nurses can have in enhancing this endeavor.

NURS-07. STAFF EDUCATION THROUGH NURSING AND PHARMACY COLLABORATION

Lauren Hancock1, and Whitney Pittman2; 1Children's National Hospital, Washington, DC, USA; 2Children's Hospital at OU Medical Center, Oklahoma City, OK, USA

Even within the focused field of pediatric oncology, there are healthcare providers who lack education regarding the specialized population of children with brain tumors. In order to improve staff knowledge of pediatric neuro-oncology, nursing and pharmacy developed a collaborative Lunch and Learn program to provide additional education. An eight week brain tumor curriculum was developed, and informal sessions grouped by diagnosis were held. A nurse practitioner presented the information from the Lunch and Learn, which then increased their working knowledge of neuro-oncology as a whole, helping them feel better prepared to handle the specialized population of children with brain tumors. In order to improve staff knowledge of pediatric neuro-oncology, nursing and pharmacy developed a collaborative Lunch and Learn program to provide additional education. An eight week brain tumor curriculum was developed, and informal sessions grouped by diagnosis were held. A nurse practitioner presented the information from the Lunch and Learn, which then increased their working knowledge of neuro-oncology as a whole, helping them feel better prepared to handle the specialized population of children with brain tumors.

NURS-08. A CASE REPORT OF RARE AND PROFOUND ANTEROGRADE AMPHISIPUS AND DIABETES INSIPIDUS

Elizabeth Bland; Sydney Children's Hospital, Sydney, NSW, Australia

We present the case of a 12yo female who presented to the emergency department with increasing agitation, confusion, fluctuating GCS, hydrocephalus, and deranged electrolytes. MRI revealed tumour in pineal region and filling the third ventricle. Biopsy and tumour markers confirmed the diagnosis of bioclastic Non Germinomatous Germ Cell Tumour (NGGCT). The diagnosis was complicated with the secondary diagnosis of diabetes insipidus and profound permanent anterograde amnesia. Whilst DI is common in NGGT in pineal region, anterograde amnesia is a very rare condition in paediatrics. Thus there is paucity of literature available to the clinicians to know how to manage such improvement with the goal of attempting rehabilitation whilst undergoing curative therapy, chemotherapy and craniospinal irradiation; however the importance of a consistent and coordinated nursing and allied health team approach with structure and errorless learning must be initiated from the beginning if independence is to be achieved.

NURS-09. INTRODUCTION OF A WELLNESS PROGRAM FOR PEDIATRIC NEURO-ONCOLOGY PROVIDERS

Kaaren Waters1, Helen Morehouse2, Kasey Rangan1, Kim Bira1, Tom Davidson1,4,1,6, Nathan Robison1,1,4,3, and Ashley Margol1,1,4,3; 1Cancer and Blood Disease Institute and Division of Hematology-Oncology, Children's Hospital Los Angeles, Los Angeles, CA, USA; 2Office of Academic Affairs, Children's Hospital Los Angeles, Los Angeles, CA, USA; 3Keck School of Medicine, University of Southern California, Los Angeles, CA, USA

INTRODUCTION: Pediatric oncology providers have unique and rewarding careers. The medical and psychosocial complexity of caring for pediatric oncology patients and their family units is simultaneously inspiring and challenging. In addition, the complex demands of the healthcare system can lead to chronic stress, burnout, and disruption to the healthcare provider’s well-being. Time constraints, lack of resources, and limited access to wellness interventions serve as barriers for providers to address adaptive coping within themselves. Identifying gaps to achieving wellness and implementing interventions may lead to improved quality of care for pediatric providers in their personal lives as well as their medical practice. METHODS: An interdisciplinary team of nurse practitioners and physicians in a large pediatric neuro-oncology program at an academic institution completed anonymized wellness self-assessments regarding the areas of emotional, environmental, intellectual, occupational, physical, social, spiritual, coping, and professional role wellness. The results were analyzed and barriers to provider health and well-being were identified. Tailored and regularly scheduled wellness interventions were implemented to support the study participants in addressing the identified wellness barriers. Participants will each complete post-intervention wellness self-assessments to evaluate the effectiveness of the program. CONCLUSION: The introduction of a provider wellness program exemplifies a feasible approach to identify barriers and evaluate efficacy of wellness interventions in achieving multi-sectoral provider wellness. Secondary aims include determination of findings, with the intention of cultivating improvement in provider quality of life throughout the healthcare profession, and the ultimate goal of improving care to patients and families.

NURS-10. IMPROVEMENTS IN A BEHAVIORAL TRAINING AND PHARMACOLOGICAL ANXIOLYSIS ALGORITHM FOR INCREASED COMPLIANCE IN PEDIATRIC PATIENTS IN PREPARATION FOR RADIATION THERAPY: A RETROSPECTIVE ANALYSIS

Judy Tran1, Jennifer Holt1, Danielle Crump2, Anita Shea3, Lin Whetzel1, Andrea Lattimore1, Rebecca Carson4, and Roberta Anderson2; 1Sibley Memorial Hospital, Washington, DC, USA; 2Sibley Memorial Hospital, Washington, DC, USA; 3Johns Hopkins Medical Institute, Baltimore, MD, USA; 4Children's National Hospital System, Washington, DC, USA; 5Cincinnati Children's Hospital, Cincinnati, OH, USA

BACKGROUND: In the pediatric population, the probability of compliance with radiation involves multifactoral elements. Younger pediatric patients often require anesthesia to ensure accurate delivery of radiotherapy. The purpose of this analysis was to refine our algorithm in pediatric patients to better identify children who would benefit from behavioral training and/or anxiolyis intervention with the goal of minimizing anesthesia use. METHODS: Retrospective data was collected from electronic medical records regarding the areas of emotional, environmental, intellectual, occupational, physical, social, spiritual, coping, and professional role wellness. The results were analyzed and barriers to provider health and well-being were identified. Tailored and regularly scheduled wellness interventions were implemented to support the study participants in addressing the identified wellness barriers. Participants will each complete post-intervention wellness self-assessments to evaluate the effectiveness of the program. CONCLUSION: The introduction of a provider wellness program exemplifies a feasible approach to identify barriers and evaluate efficacy of wellness interventions in achieving multi-sectoral provider wellness. Secondary aims include determination of findings, with the intention of cultivating improvement in provider quality of life throughout the healthcare profession, and the ultimate goal of improving care to patients and families.