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BACKGROUND: Since 2013, pediatric oncologists from Latin America have discussed neuro-oncology cases with experts from North America and Europe in a web-based "Latin American Tumor Board" (LATB). This descriptive study evaluates the feasibility of the recommendations rendered during the Board. METHODS: An electronic questionnaire was distributed to physicians who received recommendations between October 2017 and October 2018, two months after their case presentation on the LATB. Physicians were asked regarding the feasibility of each recommendation given during the Board. Baseline case characteristics of all presented cases were obtained from anonymized minutes prepared after the presentations. RESULTS: 36 physicians from 15 countries answered 103 of 142 questionnaires (72.5%), containing 283 recommendations. Physicians followed 60% of diagnostic procedural recommendations and 70% of therapeutic recommendations. Overall, 96% of respondents considered the recommendations applicable and useful. The most difficult recommendations to follow were genetic and molecular testing, pathology review, locally adapted chemotherapy protocols administration, neurosurgical interventions and access to molecular targeted therapies. The most cited reasons for not implementing the recommendations were lack of resources, inapplicable recommendations to that low-to-middle income country (LMIC) setting, and lack of parental consent. CONCLUSION: The recommendations given on the LATB are frequently applicable and helpful for physicians in LMIC. Nevertheless, limitations in availability of both diagnostic procedures and treatment modalities affected the feasibility of some recommendations. Virtual tumor boards offer physicians from LMIC access to real time, high-level subspecialist expertise and provide a valuable platform for information exchange among physicians worldwide.

LINC-19. CURRENT SITUATION OF PEDIATRIC TUMORS OF CENTRAL NERVOUS SYSTEM IN CHINA - THE FIRST CNOG NATIONAL WIDE REPORT

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Tumors of Central Nervous System (CNS) are most seen solid tumor in childhood. Accounting approximate 25–30% of pediatric neoplasms, treatments on these tumors are complicated as they occur in different age ranges, have various types according to classification system and contain different characteristic molecular profiles. There are huge gaps of medical services for children with CNS tumors in different regions in China, which is blamed to limited medical resources and lack of epidemiology data for Chinese population. After the establishment of CNOG (Children's Neuro-Oncology Group) in China in 2017, national wide registry (CNOG-MC001) was conducted to collect data on the basic information about pediatric tumors of CNS. Results of 4059 cases from 37 centers providing medical services for pediatric CNS tumors in 25 provinces from 6 greater administrative areas in China showed distinct tumor ratio, compared to worldwide data by WHO classification. The mean of age was 8.01 ± 4.73, with a male vs. female ratio as 1.48 to 1. Embryonal tumor, astrocytic & oligodendroglial tumors, and other astrocytic tumors were three most common tumor types in CNS of children. The lost follow-up rate was surprisingly high as 53.07%. In all, this is the first national wide registry for pediatric CNS tumor in China and the results attracted public and government's attentions for further epidemic investigations.

LINC-20. INFANT BRAIN TUMOURS IN HONG KONG

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OBJECTIVES: To review the clinical features, pathology and survivals of infants with brain tumours. METHODS: A retrospective review of the clinical findings, pathology, treatment and survival outcome in infants with brain tumours. RESULTS: From 1999 to 2018, there were 507 children (<18 years) who were diagnosed to have brain tumours in Hong Kong. The patients were treated in five public hospitals. The clinical data were collected by the Hong Kong Paediatric Haematology and Oncology Study Group, and were cross-checked with the data of the Hong Kong Cancer Registry. In this group of patients, there were 36 infants (birth to 365 days of age) i.e. 7.1% of the whole group. Both benign and malignant brain tumours were included, while non-neoplastic lesions were excluded. On average, there was 1.89 cases per year. The pathology of the tumours were astrocytoma (n= 8), medulloblastoma (n=6), germ cell tumour (n=6), PNET (n=5), ATRT (n=4), choroid plexus tumours (n=3), ependymoma (n=2), craniopharyngioma (n= 1) and ganglioglioma (n= 1). These infants were treated according to their clinical conditions and prognosis, with operation, chemotherapy or both. Radiotherapy was withheld or postponed to older age. Some patients only received palliative care due to the poor neurological status or prognosis. The overall survivals of children younger than 18 years old vs infants were 67.3% (±2.3) vs 50.5%(±9.2) respectively, while the event free survivals were 64.4% (±2.4) and 43.5% (±8.8) at 10-years respectively. CONCLUSION: Infants with brain tumours have different pathology and inferior outcome.

LINC-21. SURVEY ON THE RESOURCES AVAILABLE FOR PEDIATRIC NEURO-ONCOLOGY IN CHILE, SOUTH AMERICA

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BACKGROUND: We report the human and material resources available in Chilean institutions providing pediatric neuro-oncology services. METHODS: A cross-sectional survey was distributed to 17 hospitals providing pediatric neuro-oncology services (Programa Infantil Nacional de Drogas Antineoplásicas (PINDA) centers=11, Private=6). RESULTS: Response rate was 71% (PINDA=8; Private=4). Pediatric neuro-oncology services were mainly provided within general hospitals (67%). Registries for pediatric central nervous system (CNS) tumors and chemotherapy-related toxicities were available in 100% and 67% of centers, respectively. Children with CNS tumors were treated by pediatric oncologists in 92% of institutions; none were formally trained in neuro-oncology. The most utilized treatment protocols were the national PINDA protocols followed by the Children's Oncology Group protocols. All World Health Organization essential medicines for childhood cancer were available in more than 80% of participating institutions except for gemcitabine, oxaliplatin, paclitaxel, and procarbazine. The median number of pediatric neurosurgeons per institution was two (range,0–8). General neuro-radiologists were available in 83% of institutions. Pathology specimens were sent to pediatric neuropathologists (33%), neuropathologists (25%), adult pathologists (25%), and pediatric pathologists (16.7%). In-house pediatric radiation oncologists were available in 25% of centers. Intensity-modulated radiotherapy, conformal radiotherapy and cobalt radiotherapy were utilized by 67%, 58% and 42% of hospitals, respectively. Only one center performed autologous hematopoietic cell transplant for pediatric CNS tumors. CONCLUSIONS: These results provide a glimpse into the pediatric neuro-oncology services available in Chile. A wide range of up-to-date treatment modalities is available for children with CNS tumors in Chile. Establishing formal pediatric neuro-oncology training may be beneficial.

LINC-23. PRE-OPERATIVE AND POST-OPERATIVE INTERVENTIONS REDUCE RATES OF VENTRICULITIS IN PEDIATRIC BRAIN TUMOR PATIENTS: A PILOT STUDY

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BACKGROUND: The Philippine General Hospital, a public national referral center, sees 60–80 pediatric brain tumor cases per year. Historically, the rate of post-operative ventriculitis has been high, resulting in

treatment delays and poor outcomes. Starting in July 2019, as a means to decrease infections, patients were provided standardized bathing and wound care kits and caregivers were trained to follow a bathing and wound care protocol. METHODS: This quality improvement study included patients younger than 18 years who underwent craniotomy at PGH were enrolled. The type of surgery, length of surgery, existence of post-operative CNS infection, length of stay and total cost of care was collected. The outcome of these interventions are analyzed 6 months after implementation. RESULTS: Thirty-two 32 patients were included, with mean age of 7 years (1–16). The surgeries performed were: tumor resection (n=20), ventriculoperitoneal shunt insertion (VPS) (n=3), endoscopic third ventriculostomy (n=3), resection with tube ventriculostomy (n=3), Ommaya reservoir placement (n=2), and resection with shunt (n=1). Median surgery time was 4 hours (1–10). Three patients (9.4%) developed ventriculitis. No surgical site infections occurred. Compared to historical controls, a lower rate of infections was noted (9.4% vs. 15.5%, runchart analysis). Patients without post-operative infections had a shorter length of stay (median 14 vs 48 days, $p<0.05$) and a lower cost of care (median $1098 vs. $2425 USD, $p<0.05$). CONCLUSION: Implementation of simple hygiene interventions effectively lowered post-operative CNS infections and hospital costs in a public hospital setting. Incorporation of these into standard clinical practices is urgently needed.

LINC-24. CHARACTERISTICS OF PEDIATRIC BRAIN TUMORS AT DEPARTMENT OF CHILD HEALTH FACULTY OF MEDICINE UNIVERSITAS INDONESIA-DR. CIPTO MANGUNKUSUMO TERTIARY GENERAL HOSPITAL, JAKARTA, INDONESIA

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Brain tumors are still the second leading cause of death among cancers in children. Based on data from National Brain Tumor Society (2019), in United States, there are 28.000 children living with brain tumor with varied clinical, radiological, and histopathological features. The most prevalent children's brain tumor types in US are gliomas (ependymal tumors, pilocytic astrocytomas) and embroyonal tumors, including medulloblastoma. From 1993–1994 at Department of Child Health Faculty of Medicine Universitas Indonesia-Dr. Cipto Mangunkusumo Tertiary General Hospital, Jakarta, Indonesia, there are 19 patients with brain tumors hospitalized with most of patients with astrocytoma 8 patients (42%), 4 patients (21%) medulloblastoma, 2 patients (11%) neuroblastoma, 2 patients (11%) ependymoma, 2 patients (11%) craniopharyngioma, and one patient (4%) meningioma. Retrospective cohort study (2010–2015) with subjects 100 children revealed that based on the radiographs, the brain tumors were located mostly in the cerebellum (24%) and the suprasellar region (10%); based on the histopathology, the most common types of brain tumor were astrocytomas (18%), medulloblastoma (21%), and gliomas (17%). The most common symptom of brain tumors was headache and impaired vision. Survival patients with brain tumors for 5 years in the age group aged 3 years and above was better than that in children aged under 3 years (60% vs 55% and 17% vs 14%). This report can serve as one of basic data for profile children's brain tumors in Indonesia. Keywords: brain; tumor; children; survival; Indonesia

LINC-25. BRAF ABERRATIONS IN PEDIATRIC PILOCYTIC ASTROCYTOMAS (PCAS): PREVALENCE AND IMPACT ON CLINICAL OUTCOME

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BACKGROUND: Increasing knowledge on pilocytic astrocytoma (PCA) biology now points towards an aberration in BRAF/MAPK/ERK pathway which has both diagnostic and therapeutic implications. This study was done to note the impact of BRAF aberrations on clinical outcome in childhood PCA. METHODS: FFPE tissues of all childhood PCA diagnosed during 2011–2017 were evaluated for BRAFV600E mutation by Sanger sequencing and KIAA1549 fusion transcripts (16–9;15–9;16-11) by reverse transcriptase polymerase chain reaction. Children undergoing gross tumor resection received no adjuvant treatment. Unresectable tumors (only biopsy) and NF-1 associated PCAs, were treated if clinically indicated. Only patients with documented therapy details/followup were included for analysis. STUDY RESULTS: Ninety-eight patients (median age-7.7yrs; boy:girl ratio-1.4) were included. Major sites were: Cerebellum-37(38%), 3rd Ventricle-26(27%), Cerebrum-15(15%). While BRAFV600E mutation was noted in 7/89(8%) specimens, BRAF-fusions were found in 34/85(40%). Following surgery/biopsy, 23(24%) and 21(22%) received adjuvant chemotherapy and radiotherapy respectively. The 1-year/3-year/5-year-EFS of the overall cohort was 90.7%/81.3%/67.4% respectively. Cerebellar tumors did better vis-à-vis other sites(5yr-EFS:74.3% v/s 66.4%;p=0.403). The 5yr-EFS of BRAF-fusion positive tumors (34), tumors without any BRAF aberration (40) and BRAFV600E mutant tumors (7) was 84.8%/ 69.6%/ 42.9% (p=0.215). CONCLUSIONS: BRAF-fusion and BRAFV600E mutation were associated with good and poor outcomes respectively. Lack of statistical significance could be attributed to use of radiation as planned therapy in patients from earlier years. Data on BRAF aberrations in PCAs aids decision making regarding adjuvant therapy and choosing appropriate salvage-therapy especially in relapsed/refractory PCAs.

LINC-26. ORAL VINORELBINE IN PROGRESSIVE UNRESECTABLE LOW-GRADE GLIOMA

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BACKGROUND: The management of progressive unresectable low-grade glioma (PULGG) remains controversial. Some series suggests that chemotherapy may delay or even avoid radiotherapy and/or surgery in a group of patients. Within this context, we performed at IOP/GRAACC/UNIFESP an institutional protocol with IV vinorelbine, a semi-synthetic vinca alkaloid that showed activity against PULGG. The objective of this study was to evaluate the response as long as the tolerability of oral vinorelbine in PULGG. PATIENTS AND METHODS: From April 2013 to Aug 2017, 17 patients with recurrent (n=5) and newly-diagnosed (n=12) optic-pathway glioma (OPG) were treated with oral vinorelbine in a dose of 90 mg/m² days 0, 8 and 22 for 18 cycles. Response criteria used a combination of magnetic resonance imaging, physical and visual evaluation. RESULTS: Mean age 8.6 years (4.8–17.9y). Three children with neurofibromatosis type 1. Eleven patients had neurosurgical intervention revealing grade I (n=8) and grade II astrocytoma (n=3). Twelve patients were assessable after 8 cycles of vinorelbine with 2 objective response (OR), 8 stable disease (SD) and 2 progressive disease (PD), one died after surgery and 1 alive in different protocol. After 18 cycles, eight patients were assessable to date for response with 1 OR, 7 SD. The most important toxicity was gastrointestinal observed in 12 patients- six of them switched to IV vinorelbine (3OR, 3SD). None of the patients showed neurotoxicity. CONCLUSION: These results suggest that oral vinorelbine, as the IV formulation, may show some activity in OPG. However, gastrointestinal toxicity should be considered.

LINC-27. PAEDIATRIC SUPRASELLAR TUMOURS: CLINICAL EXPERIENCE FROM A SINGLE TERTIARY CENTRE IN KUALA LUMPUR, MALAYSIA

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INTRODUCTION: The outcome of suprasellar tumours in children varies with the diagnosis and morbidity is significant. We herein report the clinical features of children with suprasellar tumours treated at our centre. METHODS: Clinical data were collected by retrospective review from January 2000 to December 2019. The patients were identified from the paediatric haematology and oncology unit registry. RESULTS: There was a total of 103 children with brain tumour and suprasellar tumours comprise of 14.6% (n=15). Median age at presentation was 7 years old. Male to female ratio was 3:2. Majority of cases was low grade glioma, 40% (n=6) and germ cell tumour(GCT) 33.3% (n=5) followed by craniopharyngioma, 13.3% (n=2) and Rathke cleft cyst, 6.7% (n=1). All patients had tissue diagnosis except one with secreting GCT and one with unsatisfactory tissue sample. Mean duration of follow up was 7.4 years. One patient with germinoma was lost to follow-up after radiotherapy. Three out of 13 (23%) patients died; 2 with GCT from disease progression; 1 craniopharyngioma after 11 years of unknown cause. All survivors have significant morbidity; 70% have moderate to severe visual impairment, 90% have at least two pituitary hormones deficiency, 20% have neurological deficit and 1 was surgically related. Two boys have precocious puberty not related to disease progression. Two with GCT with diabetes insipidus had history of thromboembolism (stroke and pulmonary embolism). CONCLUSIONS: Suprasellar tumours in children at our centre pose a significant long-term complications and multidisciplinary team management and follow up is required to improve the morbidity.