NEURO-ONCOLOGY IN DEVELOPING COUNTRIES

DV-01. RISK ADAPTED TREATMENT FOR MEDULLOBLASTOMA IN CHILDREN OLDER THAN 3 YEARS: CHILDREN’S CANCER HOSPITAL EGYPT (CCHE) 57357 EXPERIENCE

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Medulloblastoma (MB) accounts for approximately 20% of pediatric central nervous system neoplasms. Current standard management includes safe maximal surgical resection followed by craniospinal irradiation (CSI) with chemotherapeutic radio-sensitization followed by adjuvant chemotherapy. The overall and event free survival rates depend upon many prognostic factors. PURPOSE: To investigate treatment outcome for newly diagnosed MB patients treated at the Children’s Cancer Hospital Egypt 57357 (CCHE). METHODS: This study included all patients; treated at the CCHE, with histologically confirmed MB between Jan, 2008, and Jan, 2011. The Median age of the 73 (49 males (67.1%) and 24 females (32.9%)) patients was 7 years (range 3-17). The median follow up period was 16 months (range 1-41). Risk stratification based upon initial Chang’s stage, degree of surgical resection and histopathology. All patients had surgical resection of the tumor. Seventy one patients (97.3%) received the allocated radiochemotherapy. One patient was lost follow up and one patient died before radiotherapy. Risk adapted treatment were performed via 2 treatment protocols (Standard and high risk). The 2 protocols differ in the dose of craniospinal irradiation and the chemotherapy regimen. RESULTS: The 3-year overall (OS) and event-free (EFS) survival differed significantly between average-risk and high-risk patients (p = 0.024 and 0.003), with 77.8% and 82% OS and EFS for the average risk group respectively and 56.8% and 50.5% OS and EFS for high-risk group respectively. The histopathology classification showed significant difference in both overall survivals: desmoplastic = 75%, classic = 71.6%, anaplastic = 47.6%, (p = 0.028) and event free survival: desmoplastic = 75%, classic = 68.9%, anaplastic = 40.5%, (p = 0.007). CONCLUSION: Preliminary results of risk adapted treatment for children suffering from medulloblastoma are encouraging and depending upon the clinical prognostic factors. Further follow up is needed to investigate further prognostic factors.

DV-02. ROLE OF APPARENT DIFFUSION COEFFICIENT (ADC) IN DIFFERENTIATION OF POSTERIOR FOSSA TUMORS IN CHILDREN: CHILDREN’S CANCER HOSPITAL EGYPT 57357 (CCHE) EXPERIENCE

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Purpose: Magnetic Resonance Imaging (MRI) is essential for diagnosis and evaluation of brain tumors. However, it offers only limited information about the type of tumor. Diffusion MRI evaluates the water diffusion within tissues and has been used in patients with brain tumors to help the identification of the type of tumor. It is still unclear whether diffusion MRI can assess the tumor type with enough specificity to be used clinically. This study aims to assess the correlation between the apparent diffusion coefficient (ADC) and the type of posterior fossa tumors in children. METHODS: Retrospective review of patient charts with histologically proven neoplasm in the CCHE database from November 2008 till March 2010 was performed. The preoperative Diffusion Weighted Imaging (DWI) and ADC characteristics of posterior fossa tumors in 48 children (19 Female, 29 Male; Age range 6 months - 15 years, median: 7 years) were compared with post-operative histopathology diagnosis (7 Ependymoma, 20 Low Grade Astrocytoma and 21 Medulloblastoma). Kruskal-Wallis test was performed to measure the difference in the ADC between different histological sub-diagnoses. Post Hoc method was used to test the significant difference between each two sub-diagnoses. Statistical analyses were performed using SPSS. RESULTS: There was a significant difference between those ADC values in different histological subgroups (p < 0.001). ADC values were significantly different between Low Grade Astrocytoma (1553.90 ± 251.21) (mean ± SD) and Medulloblastoma (684.90 ± 123.19) (P < 0.001). The study also demonstrated significant difference between Low Grade Astrocytoma and Ependymomas (1056.71 ± 183.67) (P < 0.05). However, there was no significant difference when comparing Medulloblastomas with Ependymomas (P > 0.05). CONCLUSION: In our sample, ADC showed partial significant change when used to compare different histologies. These results, if proven in future studies with higher number of patients, are expected to be of great impact on preoperative diagnosis of brain tumors.

DV-04. THALAMIC GLIOMAS IN PEDIATRIC PATIENTS: A RADIATION THERAPY PERSPECTIVE

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Thalamic gliomas are rare tumors of the central nervous system. Their outcome is relatively poor because of the involvement of thalamic nuclei and their accessibility for surgical excision. While the role of radiotherapy and chemotherapy is questionable, the use of radiation therapy is usually done to get tissue for histological diagnosis. In our study, 28 patients (M 15, F 13; ranging from 1-17 years old) with radiologically diagnosed thalamic tumors, treated from July 2007 until December 2010 at the Children’s Cancer Hospital Egypt 57357, were retrospectively reviewed and analysed in order to report their clinical and pathological characteristics and treatment outcomes. Initial common manifestations included impaired sensory and/or motor functions in addition to signs and symptoms of increased intracranial pressure. The histopathological diagnosis was not made in 3 cases. These cases were pilocytic astrocytoma in 7 patients, fibrillary astrocytoma in 9, other low grade glial tumors in 4 cases, anaplastic astrocytoma in 3 and glioblastoma multiforme in 2. Surgical interventions included tumor debulking in 6 patients and stereotactic biopsy in 19 patients. The initial treatment was surgery alone in 5 patients, surgery followed by radiation therapy in 4, surgery followed by chemotherapy in 3 patients.
and its borders and stepwise resection (p-value cases. Navigated IOUS significantly improved visualisation of the tumor system. RESULTS: In the navigated-ultrasound-guided cases; tumor was resected without significantly added operative time, blood loss or morbidity. Imaging during surgery of pediatric posterior fossa tumors helps clear visualization of the tumor and its borders and stepwise resection (p-value 0.004). There was no significant statistical difference between the two groups as regards the amount of blood loss, the operative time or the incidence of cerebellar mutism. CONCLUSION: The integration of navigated intraoperative ultrasonography during the surgery of pediatric posterior fossa tumors is feasible. METHODS: A non-randomized clinical trial study was conducted on fifty children with posterior fossa tumors. Twenty-five cases were operated upon utilizing the ordinary microneurosurgical techniques. The other twenty-five cases were operated upon utilizing the navigated intraoperative ultrasonic (IOUS) technique. We utilized the integration of iGSonic intraoperative ultrasonic technology into BrainLab-Kolibri™ neuronavigation system. RESULTS: In the navigated-ultrasound-guided cases; tumor was clearly visualized in 25 (100%) cases, total was achieved excision in 22 (88%) cases. In the non-guided cases, tumor and its borders were clearly visualized only in 17 (68%) cases; total excision was achieved in 19 (76%) cases. Navigated IOUS significantly improved visualization of the tumor and its borders and stepwise resection (p-value 0.004). There was no significant statistical difference between the two groups as regards the amount of blood loss, the operative time or the incidence of cerebellar mutism. CONCLUSION: The integration of navigated intraoperative ultrasonography during surgery of pediatric posterior fossa tumors helps clear visualization of the tumor and its borders and stepwise resection (p-value 0.004). There was no significant statistical difference between the two groups as regards the amount of blood loss, the operative time or the incidence of cerebellar mutism. CONCLUSION: The integration of navigated intraoperative ultrasonography during surgery of pediatric posterior fossa tumors helps clear visualization of the tumor and its borders and stepwise resection (p-value 0.004). There was no significant statistical difference between the two groups as regards the amount of blood loss, the operative time or the incidence of cerebellar mutism.

DV-05. THE BENEFITS OF NAVIGATED INTRA-OPERATIVE ULTRASONOGRAPHY DURING RESECTION OF POSTERIOR FOSSA TUMORS IN CHILDREN
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BACKGROUND: Radical excision of pediatric posterior fossa tumors is by far the best line of management. Pediatric posterior fossa tumor surgery challenges neurosurgeons due to the unique anatomy of this region. OBJECTIVE: Evaluation of the possible benefits of navigated intraoperative ultrasonography during the surgery of pediatric posterior fossa tumors. METHODS: A non-randomized clinical trial study was conducted on fifty children with posterior fossa tumors. Twenty-five cases were operated upon utilizing the ordinary microneurosurgical techniques. The other twenty-five cases were operated upon utilizing the navigated intraoperative ultrasonic (IOUS) technique. We utilized the integration of iGSonic intraoperative ultrasonic technology into BrainLab-Kolibri™ neuronavigation system. RESULTS: In the navigated-ultrasound-guided cases; tumor was clearly visualized in 25 (100%) cases, total was achieved excision in 22 (88%) cases. In the non-guided cases, tumor and its borders were clearly visualized only in 17 (68%) cases; total excision was achieved in 19 (76%) cases. Navigated IOUS significantly improved visualization of the tumor and its borders and stepwise resection (p-value 0.004). There was no significant statistical difference between the two groups as regards the amount of blood loss, the operative time or the incidence of cerebellar mutism. CONCLUSION: The integration of navigated intraoperative ultrasonography during surgery of pediatric posterior fossa tumors helps clear visualization of the tumor and its borders and stepwise resection (p-value 0.004). There was no significant statistical difference between the two groups as regards the amount of blood loss, the operative time or the incidence of cerebellar mutism.

DV-06. REDO - SURGERY FOR PEDIATRIC BRAIN TUMORS - IS IT FEASIBLE? AN OBJECTIVE ASSESSMENT OF PEROPIERATIVE OUTCOMES
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BACKGROUND: Redo surgery for brain tumors has historically been biased by undue pessimism based on the anticipated adverse outcomes. However objective documentation in literature is sparse. We report our experience at a tertiary care referral, dedicated neuro-oncology centre in India. MATERIALS AND METHODS: 117 children below 18 years (from 135 patients - excluded 4 abscesses and 14 shunts/reservoirs) undergoing various resective surgeries for brain tumors were analyzed over a period of five years. A prospectively maintained database which exhaustively documented the epidemiological, clinical, radiological, operative and perioperative events was used. Endpoints assessed included immediate postoperative neurological status, neurological outcome at discharge, regional complications, systemic complications, overall morbidity and mortality. RESULTS: Majority were between 3-10 years (48%). Raised intracranial pressure (70%) and neurological deficits (60%) were the commonest presenting symptoms. A significant proportion (35%) had a poor KPS (< 70). 58% supratentorial procedures were performed. Most (72%) had large (> 4cm) tumors, 58 (49.6%) had had prior treatment (33 included surgery). This group had a similar clinical profile to the untreated group. Significant neuro- logical morbidity, regional, and systemic complications occurred in 18%,28% and 21 % overall respectively. Overall major morbidity occurred in 26.5% and perioperative mortality rate was 7.7%. Neurological worsen- ing occurred more frequently in patients undergoing first surgery (p = 0.038) whereas wound-related complications were more frequent in those undergoing reoperations (p = 0.00). CONCLUSIONS: Our pediatric patients had larger tumors and were more likely to present in poor performance status, often after prior treatment (as ours is a referral centre). Wound related complica- tions were higher in the previously treated subgroup; however neurological complications were fewer, probably due to a favourable selection of patients. Despite the unavailability of advanced intraoperative aids we could achieve acceptable levels of morbidity and mortality overall.

DV-07. CENTRAL NERVOUS SYSTEM TUMORS IN CHILDREN OF NORTHERN EGYPT
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BACKGROUND: There is limited data on brain tumors in Egypt and none from Alexandria. We initiated dedicated pediatric oncology service so we had to have baseline data before launching. METHODS: A retrospective review of children and adolescents < 20 years with biopsy proven primary malignant CNS tumor attending to (ASM) from Alexandria and 3 governorates of Northern Egypt during January 1999-December 2009, were stratified. RESULTS: Total number of cases diagnosed with CNS tumors was 58, (accounting for 2.8% of the total number of pediatric non- leukaemia tumors seen in the same period of time. Most common presentation was by hydrocephalus (n = 40) followed by seizures (n = 24), changes in behavior (n = 8), endocrinal disturbances (n = 8), CT scan was the most radiological tool used (n = 48), MRI (n = 32) and MR spectroscopy (n = 8). The mean age was 10.2 and male: female ratio was 1:1, histopathologically low grade gliomas (n = 22), high grade gliomas (n = 5), ependymoma (n = 9), PNET (n = 3), craniopharyngioma (n = 4), optic glioma (n = 3), medulloblastoma (n = 3), four glial tumor (n = 7), compication reported after treatment were: cognitive dysfunction (n = 40), endocrinal disturbances (n = 24). Follow up period mean 49.01 months, 23 cases were dead, 10 cases were lost to follow up and 33 cases were alive out of the 58. CONCLUSION: In 2010 we have seen 34 cases of CNS tumors, so establish- ment of a dedicated pediatric service.

DV-08. 62 CASES OF CHILDHOOD INTRACRANIAL LESIONS ON CT/MR IMAGING: A RETROSPECTIVE SUMMARY OF SINGLE CENTER
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From 2010/10/01 to 2012/01/31, 62 pediatric patients had been diagnosed intracranial lesions on CT/MR scan in Wuhan Children’s Hospital. The median age was 30 months (1~180 months), and the ratio of male: female was 1.58 (38:24). The most three predilection sites were posterior fossa (13 cases), saddle area (11 cases) and brainstem (7 cases). The most three suspected neoplasms on imagings were ependymoma (8 cases), gloma (8 cases) and eustachian tube tumor (6 cases). The pathology reports were difficult to provide for the majority of patients had been in critical condition and missed the suitable period of surgery when admitted. In the future we should take a high premium on the early diagnosis and comprehensive therapy, including surgery, chemotherapy, radiology and functional reconstruction, on childhood intracranial lesions so as to improve their long- term survival.

DV-09. INCIDENCE OF CHILDHOOD BRAIN TUMORS IN ALGERIA
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BACKGROUND: Brain tumors are the most common disease group of solid tumors in childhood; however, no epidemiological data were available for Algerian population. The objective of this study was to estimate the incidence of childhood brain tumors in Algeria. METHODS: Data from all Algerian public neurosurgical and pediatric oncology departments were collected. All children with newly diagnosed brain tumors in Algeria were compared with those of other countries, as published by the International Agency for Research on Cancer. RESULTS: A total of 226 children with newly diagnosed brain tumors (excluding intracranial and intraspinal germ cell tumors) were observed in 2009. The respective incidence rates for children 15 years was 2.4 per 100,000 children and lies between the rates from other countries, which range between 1.7 and 4.1 per 100,000 children. The most common brain tumors were astrocytomas (30.1%), medulloblasto- mas (22.7%), craniopharyngiomas (8.4%), ependymomas (7.1%), and suprasellar primitive neuroectodermal tumors (PNETs; 4%). They were...
INTRODUCTION: As Central Nervous System tumours account for second most common childhood malignancies, improving treatment modalities can increase the survival rate of patients. The epidemiological investigations make a large-scale database of analysis for prognostic features of this group. In this study, we examined the epidemiology of childhood brain tumours in patients who referred to MPCTR (one of the main national referral centers for childhood malignancies in Iran) for treatment. MATERIAL & METHOD: This cohort (simple sampling) study consisted of 198 children less than 15 years old with CNS tumor who referred to MPCTR since 2007 to 2010. The unique checklist contained epidemiological features filled for each individual. Data analyzed by SPS version 19 with Kolmogorov-Smirnov and Chi square tests. RESULTS: Out of enrolled patients 125(63.1%) male and 73(36.9%) female, had the mean age of 6.11 ± 3.65 years old. Tumors located in supratentral (N = 60, 30.3%), infratentorial (N = 134, 67.7%) and spinal (N = 4, 2%) areas. High-grade glioma and medulloblastoma were the most tumors in supratentorial and infratentorial locations respectively. The majority of patient’s stage in medulloblastoma group was T2M0 (N = 44, 22.2%). The most clinical findings were vomiting, headache and impaired vision respectively. Twenty two patients (15.7%) patients had relapse. there were 76(38.4%) off treatment and 82 (41.4%) death. The five years survival rate was 36%. CONCLUSION: According to the similar previously studies, the epidemiological features are same but the survival rate in this investigation was lower. Therefore, cautious interpretation in the future’s investigations is undesirable. Brain tumor-based approach can lead to determine better treatment modalities for increasing cancer burden in pediatric malignancies.

INTRODUCTION: The first Pediatric Neuro-Oncology Program in Poland was developed in 1996. Before that time majority of children with CNS tumors were treated by adult neurosurgeons/radiotherapists and chemotherapy was considered as a tragic option. There was a complete data concerning epidemiology/results of these entities in children. AIM: We are presenting our experience in developing the program and the results of the 15 years of its functioning. METHODS: The following steps were undertaken; retrospective analysis of children with CNS tumors from our center treated before 1996 was performed to serve as a reference since it was a pediatric center treating children with brain tumors, protocols for specific tumors adapted from SIOP or own were prepared and implemented in 10 pediatric oncology centers. In each center multidisciplinary team (pediatric oncologist, neurosurgeon, pathologist, radiologist) were formed. All tumors had to be verified by central pathology review, interdisciplinary consultations at our center were available for all patients diagnosed with CNS tumor. National computer data collection of primary CNS tumours started in 2002. Concurrently studies on the role of imaging techniques (MRI spectroscopy, DWI, PWI) and researches on molecular biology of CNS tumors are being conducted. Quality of life of patients is being explored. RESULTS: Since 2002 1735 patients were registered. LGG were the most common 42.8%, followed by MB/PNET-17.1%, HGG-8.5%, brain stem- 7.3%, Ependymoma 6.6%, GCT-3.4%. Interdisciplinary approach and unified treatment protocols resulted in the following 5 yrs OS survival; LGG - 95.2 %, MB/PNET - 38.4 HGG-26.2%, Anaplastic Ependymoma 88%, GCT-90,4%, NGCT-55%, CPC-58%, ATRT-23.5%, brain stem 82.2 %. All of these results are superior to those obtained before 1996. This program has also instituted close and constant cooperation with its national participants. Supported by The National Centre for Research and Development.

On the 19th January 2012, the opening session of the interval meetings of the Neuro-Oncology Scientific Club (NOSC-THN) was held in Tehran, Iran. The NOSC is a newly established scientific forum which has currently formed provincial steering boards in the country and is expected to be turned to the national NOSC in its future perspective. The interdisciplinary nature of this club provides a multifaceted approach for diagnosis, treatment and follow-up of brain tumour patients. Participants from disciplines like radiation oncology, neurosurgery, radiology, adult and pediatric hematology and oncology and neurology utilized this transparent and unbiased round table to contribute to discussions and decisions. All members were open to debate, with interdisciplinary team work for brain tumor patients health and quality of life at the center. This report summarizes the communicated insights (neurosurgery, radiodiagnostics and radiochemotherapy) and the suggested strategies during the first NOSC-Tehran meeting re-emphasizing the significance of the interdisciplinary approach as a practical model in CNS tumor patients’ care. The conclusive remarks of the forum were: a) utilizing this scientific club both for maximizing outcome in treatment of brain tumors and as a scholarly forum for fundamental and translational research planning and follow ups, b) fostering interdisciplinary team work through NOSC interval meet ups to improve our adult and pediatric brain tumor patients’ health and quality of life, c) further encouraging participation of expert physicians from all allied disciplines in adult and pediatric CNS malignancies, d) preparing to launch and utilize the National Iranian Brain Tumor Registry (NIBTR) in conformity with the quality standards of the national cancer registry, steered by the Iranian Ministry of Health and e) contributing to organized adult and pediatric brain tumor boards in Tehran, Iran.

INTRODUCTION: The first Pediatric Neuro-Oncology Program in Poland was developed in 1996. Before that time majority of children with CNS tumors were treated by adult neurosurgeons/radiotherapists and chemotherapy was considered as a tragic option. There was in complete data concerning epidemiology/results of these entities in children. AIM: We are presenting our experience in developing the program and the results of the 15 years of its functioning. METHODS: The following steps were undertaken; retrospective analysis of children with CNS tumors from our center treated before 1996 was performed to serve as a reference since it was a pediatric center treating children with brain tumors, protocols for specific tumors adapted from SIOP or own were prepared and implemented in 10 pediatric oncology centers. In each center multidisciplinary team (pediatric oncologist, neurosurgeon, pathologist, radiologist) were formed. All tumors had to be verified by central pathology review, interdisciplinary consultations at our center were available for all patients diagnosed with CNS tumor. National computer data collection of primary CNS tumours started in 2002. Concurrently studies on the role of imaging techniques (MRI spectroscopy, DWI, PWI) and researches on molecular biology of CNS tumors are being conducted. Quality of life of patients is being explored. RESULTS: Since 2002 1735 patients were registered. LGG were the most common 42.8%, followed by MB/PNET-17.1%, HGG-8.5%, brain stem- 7.3%, Ependymoma 6.6%, GCT-3.4%. Interdisciplinary approach and unified treatment protocols resulted in the following 5 yrs OS survival; LGG - 95.2 %, MB/PNET - 38.4 HGG-26.2%, Anaplastic Ependymoma 88%, GCT-90,4%, NGCT-55%, CPC-58%, ATRT-23.5%, brain stem 82.2 %. All of these results are superior to those obtained before 1996. This program has also instituted close and constant cooperation with its national participants. Supported by The National Centre for Research and Development.
DV-14. SUPRATENTORIAL NEUROGLIAL TUMOURS OF CHILDHOOD: A RETROSPECTIVE ANALYSIS OF OUTCOMES
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The outcome of childhood supratentorial neuroglial tumours is not as well described as for other childhood brain tumours. We present a location-based retrospective analysis of supratentorial tumours over a 10 year period. METHODS: Ninety-nine children underwent surgery for supratentorial tumours at this institution during the period 2000 - 2010. There were 29 ‘lobar’ neuroglial tumours and 17 deep hemispheric (thalamic/ basal ganglia) tumours. All lobar tumours underwent craniotomy and excision. Total excision, judged by postoperative imaging, was possible in 21 (70%) and subtotal excision in 8 (30%). Amongst the deep hemispheric tumours, eight underwent stereotactic biopsy, seven subtotal excision and one total excision. RESULTS: The mean age was 8.3 years (range, 0.1 to 16.3 years). The most common diagnosis was astrocytoma 58 patients (32%), followed by brain stem gliomas 25 patients (14%), dysembryoplastic neuroepithelial tumours, and four gangliogliomas. Of these, 10 (6%) patients received other histological diagnosis. The diagnosis of brain stem glioma was based on radiologic and clinical findings. The estimated 5-year overall survival for all patients was 60% (95% CI: 52% - 68%). Forty-three patients (24%) died of progressive disease, and 9 (5%) died of toxicity, and 5 (2.8%) patients abandoned treatment. CONCLUSIONS: The multidisciplinary team was able to satisfactorily manage children with brain tumour. We hope the team approach in addition to tumbling and telemedicine with IOP will improve our outcome.

DV-15. HIGH DOSE CHEMOTHERAPY WITH AUTOLOGOUS STEM CELL RESCUE IN CHILDREN LESS THAN THREE YEARS OF AGE WITH BRAIN TUMORS: KING ABDULAZIZ MEDICAL CITY EXPERIENCE
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BACKGROUND: High dose chemotherapy with autologous stem cell rescue have been utilized in young children with brain tumours to avoid or delay the use of radiation. METHODS: We retrospectively reviewed medical records of 5 patients with malignant brain tumours who underwent high dose chemotherapy and stem cell rescue at King Abdulaziz Medical City. All patients underwent initial surgery and postoperative chemotherapy (Modified head Start II). Peripheral blood stem cells were harvested after the first and/or second cycles of induction. High dose chemotherapy consisted of carboptatin and thiopeta. RESULTS: Among the five patients, three had atypical teratoid/rhabdoid tumour (AT/RT), one had ependymoma, and one had medulloblastoma (MB). The median age at diagnosis was 23 months. All patients had residual disease after first surgical resection. There was significant response to induction chemotherapy; however, minimal residual disease not amenable for resection in one patient. Two patients underwent two cycles of high dose chemotherapy and two patients had one cycle. Median CD34 cell dose collected was 10 X10^6/kg. Median CD34 cell dose infused was 3.67 X10^6/kg. All patients successfully engrafted. Median time to neurologic engraftment was 14 days. Median time to platelet engraftment was 17 days. There was no transplant related mortality. Three patients died due to disease progression (2/3 received radiod). Two patients are alive with no evidence of progression; both received focal radiation. Progression free survival was 60% at 1 year and 30% at 18 months from diagnosis. Median follow up time is 23 months. CONCLUSION: High dose chemotherapy with stem cell rescue can be safely performed in young children with brain tumours. Poor outcome in our series is related to the aggressive nature of primary tumors and probably the presence of residual disease at the time of transplant.

DV-16. ATYPICAL TERATOID Rhabdoid Tumor (ATRT) FROM YANGON CHILDREN HOSPITAL, MYANMAR: A CASE REPORT
Tin Zaw Hnin, AyeAye Khaing, and Htay Htay Tin; Yangon Children’s Hospital, Yangon, Myanmar

BACKGROUND: Atypical teratoid rhabdoid tumor is a rare tumor. This is the first reported case in pediatric hematono-ocmono in Myanmar. CASE: One-year-old boy presented with acute onset of low-grade fever, projectile vomiting and abnormal eye movement and generalized tonic-clonic convulsions. CT scan showed a 3.5 × 4.5 cm lesion in the left cerebellum with moderate hydrocephalus. A ventriculoperitoneal shunt was inserted and surgical resection was performed. Histology showed a small blue round cell tumor. NSE and S100 were weakly positive with negative LCA. The appearance was compatible with neuroblastoma or medulloblastoma. Postoperatively, the boy’s condition deteriorated. Urgent CT revealed large recurrent tumors and OJEC Chemotherapy was started. Final histopathology report from Singapore was consistent with the diagnosis of ATRT, with inactivation of PTEN. After second cycle of chemotherapy, the boy’s condition had not improved significantly and CT showed residual tumor slightly larger in size. Hence, treatment was switched to VETOPEC regime (Vincristine/ Etoposide/Cyclophosphamide). Three cycles of VETOPEC were completed and the tumor seemed to respond to chemotherapy with clinical and radiological improvement. After the 5th cycle, unfortunately the patient got febrile neutropenia, persistently raised ICP despite cerebral decongestants and he succumbed 5 months after diagnosis. DISCUSSION: In this case, the clinical presentations and behavior of the tumor is consistent with the typical ATRT. Since intensive multimodality regimen with high dose myeloablative chemotherapy and radiotherapy is unavailable in our hospital setting, the case was only started with VETOPEC regimen which is for any unknown solid tumor treatment without cranial RT nor intrahealth chemotherapy. In this case, with surgery and conventional chemotherapy only, the boy sur- vived for 5 cycles. CONCLUSION: Atypical teratoid rhabdoid tumor is a rare and difficult to treat tumor in resource limited countries. We would like to share our experience in the first case of ATRT and difficulty in management of ATRT in our center.

DV-17. A RETROSPECTIVE STUDY OF 123 PEDIATRIC BRAIN TUMORS PATIENTS IN AN EGYPTIAN INSTITUTE
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BACKGROUND: Central nervous system tumors comprise 15% to 20% of all malignancies occurring in childhood and adolescence. There is a little population based data on their incidence at a national level. We aim to describe the incidence and outcome of childhood primary brain tumors in one of the biggest ministry of health centers (Nasser Institute). METHODS: It is a retrospective study on children under the age of 16, presenting at Nasser Institute with primary brain tumors between 1999 and 2011. Clinical history, biopsy reports, operative reports of patients were analyzed, as well as: age, sex, histology, treatment and overall survival. RESULTS: One hundred and twenty three children were diagnosed with primary brain tumors during the period studied.
65 males and 58 females with a male-female ratio 1.12:1; median age 7 years (0.25-16); mean age 7.48 years; median follow-up 14 months. The main histological type was medulloblastoma (39.8%), followed by low grade astrocytoma (23.6%), gliomas with brain stem involvement (13%), ependymomas (12.2%), glioblastomas (4.1%), PNET (3.3%), germ cell tumors (2.4%), optic nerve glioma (1.6%). Fourteen percent of the patients did not undergo any surgical intervention, whereas all the rest underwent incomplete surgical intervention. Eighty six percent of patients received radiotherapy and 87% received chemotherapy. The 5-year overall survival (OS) of the whole group was 46.4%. The 5-year disease free survival (DFS) for the whole group was 71.8%. Correlation of survival with prognostic factors showed a statistical significance difference to the following: medulloblastoma (p = 0.001), males (p = 0.005) and surgical intervention (p = 0.001).

CONCLUSION: Medulloblastoma is the most frequently encountered brain tumor in this study with the best 5-year overall survival. Histology, sex and surgical intervention are statistically significant prognostic factors in pediatric brain tumors in our institution.

DV-18. EPIDEMIOLOGY AND TREATMENT OUTCOME OF CHILDHOOD ASTROCYTOMAS: A SINGLE INSTITUTION 10-YEAR OF PEDIATRIC ONCOLOGY UNIT OF REBAGLUITI HOSPITAL IN LIMA, PERU

Ivan Maza, Liliana Vásquez, Katy Ordoñez, Gloria Paredes, Alejandro Yábar, Erika Ugarte, and Jenny Gerónimo; Edgardo Rebagliati Martins Hospital, Lima, Peru

BACKGROUND: Astrocytoma (AS) is the most common type of brain tumors in children. These are heterogeneous tumors that vary in presentation, treatment and outcome. There is little information on AS in children in Peru. METHODS: We reviewed retrospectively the medical records of all children < 18 years old with AS for 10 years (2001-2010) treated at our hospital. We collected demographic, clinical, radiologic, pathologic, treatment and outcome data. RESULTS: Thirty four children with AS (16 boys and 18 girls) were diagnosed and treated at our hospital. Their median age was 10 years. The symptoms were headache (68%) and motor deficit (47%). Visual compromise was found in 26.4% and seizures were reported in 17.6%. The median time of presenting symptoms was 24.2 weeks. The tumor locations were: brain lobes (44.1%), cerebellum (26.4%), brain stem (5.9%), thalamus (11.8%), spinal cord (5.9%) and overlapping brain sites (5.8%). Hydrocephalus was present in 23 patients (67.6%). Only two patients had metastases (5.8%). Eight tumors were histologically classified as WHO grade 1 (23.5%), 17 as grade 2 (50%), 6 as grade 3 (17.6%) and 3 as grade 4 (8.8%). Tumor gross total resection is followed by radiotherapy. If complete resection is not possible, patients undergo chemotherapy and further surgical interventions. In average, the time from diagnosis to surgery was 2.1 weeks, and from surgery to radiotherapy was 9.1 weeks. Complete resection was achieved in only 9 patients (26.4%). Fourteen patients had two or more surgical interventions (41.2%). A ventriculoperitoneal shunting was required in 23 patients (67.6%). Twelve children (35.3%) survived with no evidence of disease, and 6 (17.6%) with evidence of disease. Twelve children (35.3%) died. The median follow-up was 54 months. CONCLUSIONS: Astrocytoma has high mortality in our hospital; this is likely due to late diagnosis, incomplete tumor resection and deficient supportive care. Targeted improvements in these areas may increase survival.