

NEUROLOGY 004 PRIMARY INTRACRANIAL TUMORS DIAGNOSED DURING THE FIRST YEAR OF LIFE: A RETROSPECTIVE STUDY OF BELGIAN CASES BETWEEN 2001 AND 2014.

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Introduction: Brain tumors are the second most common cause of cancer in children after acute lymphoblastic leukaemia. They account for approximately 20% of all tumors. For children younger than 1 year, this pathology represents 15% of all cancers. Studies describing brain tumours in this age group are limited and some have revealed differences when compared to the older paediatric population (e.g. clinical presentation, topographic distribution or prognosis). Most studies are too small to attain statistical significance.

Aim: The aim of this work was to describe brain tumors in children under 1 year of age in Belgium and to define how they may differ from older children. We wanted to analyse various parameters such as the clinical presentation at diagnosis, the distribution and the frequency of histologic subtypes, the intracranial localisations, overall global survival and sequelae.

Methods: Retrospective analysis inclusion criteria were intracranial primary neoplasms diagnosed during the first year of life between 2001 and 2014. Cranial nerve tumors and glandular tissues tumors were included. Metastasis, vascular malformations, spinal tumors and hamartomas were excluded. We performed a retrospective analysis of data collected from all Belgian paediatric hemato-oncology institutions: The Institut Roi Albert (UCL), the Hôpital Universitaire des enfants Reine Fabiola (HUDERF), the Clinique de l'Espérance (CHC Liège), the Universitair Ziekenhuis Gent (UZG), the Universitair Ziekenhuis Leuven (KUL), Universitair Ziekenhuis van Antwerpen (UZA).

Results: We identified 60 patients who met the inclusion criteria. Median age at diagnosis was 7 months and 15% of the tumors were metastatic at diagnosis. The male to female ratio was 1:1. The median follow-up time was 86.19 months. The median prediagnosis interval was 28 days, and varied according to presenting symptoms. The most frequent tumour type was pilocytic astrocytoma (25%), ATRT (11.6%) and glioblastoma (8.3%). Signs of intracranial hypertension were present in 64.3% of cases. The most common signs were vomiting (43.3%), hydrocephalus (41.7%), bulging fontanelles (26.7%). Anatomical localisation corresponded to clinical presentation. The most common was the supratentorial space (53%). Other localisations were central, posterior fossa tumors and the brainstem with respectively 21%, 19% and 7%. We obtained a 5y-OS of 66.6%. This survival varied significantly with the histologic type, histological grade, and completeness of surgical resection. However, age, localisation, age at diagnosis, prediagnosis symptom interval and primary dissemination did not demonstrate significant difference for the overall survival rate.

Conclusions: Conclusion: Infant brain tumours are rare, thus making statistical analysis difficult. We described only 60 patients in 6 institutions in 14 years. This is the first time the Belgian experience of infant brain tumors is described and this series is one of the largest series described internationally. Nevertheless, larger patient groups are needed to establish specific diagnostic and therapeutic guidelines.

NEUROLOGY 005 METRONOMIC TREATMENTS IN PEDIATRIC NEURO-ONCOLOGY, A NEW THERAPEUTIC ALTERNATIVE?

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Results: Metronomic chemotherapy is the daily or weekly administration of low doses of chemotherapy without prolonged interruption between treatment cycles. This type of treatment is currently used for palliative purposes. We present the clinical course of two patients with brain tumours in the University Department of Pediatric Hemato-Oncology of the CHR Citadelle. Following tumor progression after several treatment lines, metronomic chemotherapy was introduced for palliative purpose and surprisingly led to prolonged complete remission. Based on these two clinical cases, we illustrate the rationality of metronomic treatments and question their place in pediatric neuro-oncology. The first patient developed a metastatic medulloblastoma while he was 4 years old. As first-line treatment, he received for 12 months the HIT protocol, which combines chemotherapy and radiotherapy. The result was a stability of the lesions. The lesions were also stable with the second line of maintenance chemotherapy with Temozolomide. Treatment with metronomic chemotherapy was initiated with an oral administration of Temozolomide at 50mg/m²/day from October 2012 to February 2014, together with intrathecal injections of Etoposide 0.5mg once/day for 5 days over 28 days alternating with Cytosar Liposomal (Depocyte®) 35mg once/day one day over 28 days from October 2012 to November 2013. In total, the patient received Temozolomide for 17 months and intrathecal chemotherapy with Etoposide and Cytosar Liposomal for 12 months. The introduction of this treatment led to a stabilization of the disease and then to complete remission for three years. The second patient presented a metastatic pinealoblastoma while he was 9 years old, in a context of predisposition to tumors. He received a first regular chemotherapy followed by radiotherapy but the disease remained stable. Treatment with metronomic chemotherapy was initiated in September 2015 with intravenous administration of Avastin® 400mg once every 15 days, combined with daily oral administration of Célécoxib (Celebrex®) 200mg in

the morning and 100mg in the evening, Fenofibrate 160mg and Thalidomide 100mg. Apart from Thalidomide stopped in June 2016, the patient still receives the other three molecules. This treatment has led to a complete remission for 18 months. The analysis of these two cases illustrates the effectiveness of metronomic chemotherapy after using several treatment lines, with less toxic effects. Indeed, the administered dose is clearly lower than the doses of regular chemotherapy, which reduces the toxicity of the molecules. This low daily dose can be administered at home, improving compliance with treatment. The absence of interruptions between administrations, usually present in conventional chemotherapy, improves the efficiency of molecules by preventing tumor cell replication. In addition, the molecules also target the vascular compartment, specifically the endothelial cells. These are more vulnerable to low doses of chemotherapy agents than healthy endothelial cells and are the unique targets. Endothelial cells are genetically more stable than tumor cells, what induces less resistance to the molecules used in metronomic chemotherapy. The introduction of this type of treatment, as the first therapeutic alternative in the medical treatment, should be the subject of future studies to measure its effectiveness.

NEUROLOGY 006 LONG-TERM FOLLOW UP OF QUALITY OF LIFE AFTER PEDIATRIC STEM CELL TRANSPLANTATION: COMPARING RESULTS ON THE PedsQL PATIENTS AND PARENTS.

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Introduction: Allogeneic stem cell transplantation (SCT) proved to increase survival rate in life-threatening diseases as cancer in pediatric patients. In consequence patients and parents face new and major challenges on return to ordinary life. As part of the awareness of the possible impact of allogeneic transplant on quality of life (QOL) we started in 2010 with a multidisciplinary outpatient clinic for long-term follow-up of patients (pts) from at least 1 year post SCT. In this study we wanted to find out if there is a difference in QOL measured with the Pediatric Quality of Life Questionnaire (PedsQL), both in terms of overall QOL as in terms of fatigue, comparing data from patients and parents.

Aim: In the literature there is evidence for using information not only from patients, but also from so-called 'proximal', mostly parents. As in an earlier study we found that parents have a pretty good picture of the physical condition and academic performance of their children, but have a significant different perception of the emotional and social well-being of their child and also tend to underestimate fatigue, we wanted to explore if this was confirmed by new data.

Methods: We used the PedsQL to measure the impact of disease burden in patients and parents. Average time after SCT was 1 year. We used both the generic module and the fatigue module. From the age 5-7 both children (if able to) and parents filled in the questionnaires, for preschool children only parents. The PedsQL has values 0 to 100, where high values mean high levels of QOL. Some data are missing mostly for reasons as other culture, mental retardation, age. The results relate to data from 40 patients and their parents for the PedsQL generic module and 39 patients and their parents for the PedsQL fatigue module filled in between november 2015 and oktober 2016.

Results: We found consistently very small (not significant) differences in the results of patients and their parents both in the general as in the fatigue module. We can only find that parents tend to underestimate the emotional well-being (mean patients higher QOL) of their children and underestimate (mean patients lower QOL) fatigue in the field of sleep.

Conclusions: Even if we found some differences in perception on the emotional QOL (underestimation by parents) and concerning fatigue (overestimation QOL by parents), the hypothesis that these differences are significant is not confirmed, neither for the general PedsQL, nor for the fatigue module of the PedsQL.

NEUROLOGY 007 MULTIPLE EPSTEIN-BARR VIRUS ASSOCIATED SMOOTH MUSCLE SARCOMAS OF THE GUT IN A CHILD TREATED FOR ACUTE LYMPHOBLASTIC LEUKEMIA.

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Results: Introduction Epstein Barr virus-smooth muscle tumors (EBV-SMT) are rare and present typically in immunocompromised patients. Complete surgical resection represents the main therapeutic approach, in particular in progressive tumors. Reduction of immunosuppressant dose in organ transplant patients or improvement of the immune status is also crucial in disease control. There is currently no EBV-targeted therapy for EBV-SMT but sirolimus could be a potential alternative treatment. Case description A 7-year-old boy with a history of low-risk acute lymphoblastic leukemia (ALL) treated according to the French ALL protocol for low risk patients (Fralle 2000 A group) began to complain of abdominal pain towards the end of maintenance therapy. Abdominal ultrasound showed two ileal intussusceptions. As one of them was no longer reducible, a laparotomy was performed and showed more than ten polyps in the small intestine which were not resected in order to avoid extensive small bowel resection. One week later, a second laparotomy was necessary because of symptom recurrence with relapse ileo-ileal invagination. Histologic examination revealed intestinal smooth muscle sarcomas associated with EBV and a PET-CT scan showed multiple active lesions in the small bowel.