Abstracts

for all patients for fluid and crystallized intelligence, selective attention, visual-spatial processing (VSP) and verbal short-term memory (median=93-103), but distinctly below for processing speed (PS), and psychomotor speed abilities (PMS) (median=65). The lower doses of cranio-spinal irradiation (23.4Gy/23.4Gy) resulted in lower scores for most domains for MB-patients compared to LGG-patients (e.g., PS-estimate: +2.4Gy=7.71, ps=0.026/23.4Gy=9.91, p=0.286). EP-patients (surgery+4Gy local radiation) scored better than LGG-patients except CP. In the three groups, higher degrees of hydrocephalus (estimate=7.64, p=0.103) in patients with incomplete resection (estimate=12.23, p=0.006) for PMS both hands. CONCLUSION: Following age-adapted comprehensive treatment, survivors of a cerebellar tumor show significant impairments of PMS abilities in our trials. Our data suggest that slow growing LGG impair neurocognitive development more than local radiotherapy for ependymoma, while craniopinal irradiation compromises VSP and PS in MB. Initial symptomatic intracranial pressure remains a strong predictor for general neuropsychological impairment.

QOL-05. CARDIORESPIRATORY FITNESS AND HEALTH-RELATED QUALITY OF LIFE AMONGST SURVIVORS OF CHILDHOOD CENTRAL NERVOUS SYSTEM TUMOURS
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INTRODUCTION: Due to recent advancements in surgical techniques, imaging and adjuvant therapies, survival rates for children with central nervous system (CNS) tumours have improved. Research priorities have now shifted to focus on late-effects and quality of survivorship amongst childhood CNS tumour survivors. Our study aimed to assess levels of cardiorespiratory fitness and health-related quality of life (HRQoL) amongst survivors of childhood CNS tumours. A secondary aim was to investigate potential relationships between cardiorespiratory fitness and HRQoL. METHODS: Participants were recruited from the National Children’s Cancer Service in CHI Crumlin. Inclusion criteria included: diagnosis of a primary CNS tumour, aged between 6-17 years, between 3 months and 5 years post completion of oncology treatment, independent mobility, deemed clinically appropriate to participate by treating oncologist. Cardiorespiratory fitness was assessed using the six-minute walk test. HRQoL was assessed with the PedsQL Generic Core Scales, Version 4.0, both self-report and parent proxy report forms were used. RESULTS: 20 participants (n=9 male) were recruited with a mean age of 12.34 (SD = 3.46) years. Mean time since completion of oncology treatment was 2.31 (SD = 1.38) years. Mean 6-minute walk distance (6MW) was 482.73 (SD = 50.04) metres, equating to the 55.5th (SD = 6.83th) percentile overall. 6MW was significantly reduced compared to predicted 6MW (t = -12.52, p<0.001, 95% CI [-163.52, -116.89]). Parent proxy-reported HRQoL was significantly reduced compared to healthy population means for the domains of HRQoL (t = -2.53, p<0.001, 95% CI [-11.67, -12.17]). A significant positive correlation exists between 6MW and both parent-proxy (Pearson’s r = 0.533, p = 0.015) and child-reported HRQoL (r = 0.580, p = 0.007). CONCLUSION: Survivors of childhood CNS tumours present with impaired levels of cardiorespiratory fitness and HRQoL compared to healthy population norms. Higher levels of cardiorespiratory fitness are associated with higher levels of HRQoL.

QOL-06. WHAT IMPACT DOES A POSTERIOR FOSSA TUMOR IN CHILDHOOD HAVE ON MOTOR PROCEDURAL LEARNING? GROUP PERFORMANCE DEPENDING ON RADIOThERAPY STATUS AND INDIVIDUAL DIFFERENCES ON A PERCEPTO-MOTOR SEQUENCE LEARNING TASK AND A MOTOR ADAPTATIVE TASK (IMPALA PROSPECTIVE STUDY)
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INTRODUCTION: Procedural memory (PM) is a skill learning system that allows, through training, the automatization of procedures and progressive improvement of performances. The aim of this work was to explore the impact of a posterior fossa tumor (PFT) on PM. We hypothesized that motor adaptation, depending on cortico-cerebellar system, was impaired in PFT survivors and without radiotherapy, and depending on cortico- striatal system, was only impaired in PFT treated with radiotherapy. METHODS: We investigated PM in 60 participants from the IMPALA study (NCT04324430) divided into three groups: 39 cured from a PFT in childhood (22 irradiated (PFT+RT group) and 17 non-irradiated (PFT group) and 21 healthy volunteers (Control group) matched on age, sex and handedness with the PFT+RT group. We used a visuo-motor learning task, the Serial Reaction Time task (SRTT) and a motor adaptation task (23.4Gy/23.4Gy) resulting in lower scores for most domains for MB-patients compared to LGG-patients (e.g., PS-estimate: +2.4Gy=7.71, ps=0.026/23.4Gy=9.91, p=0.286). EP-patients (surgery+4Gy local radiation) scored better than LGG-patients except CP. In the three groups, higher degrees of hydrocephalus (estimate=7.64, p=0.103) in patients with incomplete resection (estimate=12.23, p=0.006) for PMS both hands. CONCLUSION: Following age-adapted comprehensive treatment, survivors of a cerebellar tumor show significant impairments of PMS abilities in our trials. Our data suggest that slow growing LGG impair neurocognitive development more than local radiotherapy for ependymoma, while craniopinal irradiation compromises VSP and PS in MB. Initial symptomatic intracranial pressure remains a strong predictor for general neuropsychological impairment.

QOL-07. THE IMPORTANCE OF AN ONCO-FERTILITY PROGRAM FOR PEDIATRIC NEURO-ONCOLOGY PATIENTS
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INTRODUCTION: In the Netherlands pediatric oncology care is centralized in one hospital since 2018. 600 new patients a year are seen with 100-120 new neuro-oncology (NO) patients. Of the NO patients 20-25% classified as high risk for infertility (HR) such as patients with medulloblastoma, ependymoma, AT/RT and germ-nnoma to name a few. An onco-fertility program was started navigated by a nurse-practitioner. The program runs with intense collaboration between the different specialties. All new patients are identified according to the international guidelines on fertility care. The fertility-risk is based on the CED score (cyclofosfamide equivalent dose) and radiotherapy dose. Since 2018 awareness was created by teaching sessions among colleagues, nursing staff, and parent association organizations. METHODS: All HR children are informed by the nurse-practitioner and can be referred for counseling to gynaecology for OTC (ovarian tissue cryopreservation) or urology for sperm cryopreservation or testicular biopsy. Monthly the onco-fertility-working group members discuss cases and research in the field. RESULTS: In 2019, 19% NO cases and in 2020 18% were HR for infertility. In both years 36% of these cases had fertility preservation performed. In 2021, 22% cases HR were identified and in 55% preservation was performed. Reasons for not preserving fertility were diverse, varying from poor prognosis, or too old to be included. CONCLUSION: Awareness of the fertility risk in NO patients who are HR is necessary. These patients need to be informed, and stratified for counseling and offered fertility preservation before start of their treatment. An active onco-fertility program helps to offer the best option for future fertility for these patients.

QOL-08. VISUAL MEMORY AND POTENTIAL CLINICAL RISK FACTORS IN LONG-TERM SURVIVORS OF A CHILDHOOD BRAIN TUMOR
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A brain tumor treatment has previously been associated with long-term neurocognitive sequelae. However, clinical profiles differ between certain patient subgroups. We investigated the impact of tumor location, radiotherapy (RT), and age at diagnosis in childhood brain tumor survivors on long-term cognitive outcomes. Adult survivors (n=32) of pediatric brain tumors (n=11 infratentorial, n=21 supratentorial), 14 astrocytomas, 3 craniopharyngiomas, 2 ependymomas, 2 germinomas, 1 hemangioblastoma, 4 medulloblastomas, 6 neuro optic (gomas) participated in this neuropsychological study (n=11 RT) (16.8-35.1 years old, 2-year after treatment, mean age at diagnosis = 9.2 years, 50% male). An extensive neurocognitive test battery was used to assess intelligence scales (n=5), verbal and visual memory (n=6), language (n=3). In order to investigate the effects of tumor location (infra- versus supratentorial), RT (yes vs. no), and age at diagnosis on the cognitive scores, a multivariate ANCOVA model was tested including the main effects and interaction between age and RT. Of all included scales only visual memory was significantly associated with the risk factors. More specifically, patients who received RT (F=10.3, p=0.004) and were younger at diagnosis (F=6.9, p=0.04) scored worse on this task. Furthermore, the interaction effect between these factors was also significant (F=8.8, p=0.036). These findings suggest that tumor and motor sequences are associated with visual memory outcomes. Tumor location (supra- vs infratentorial) was not significantly associated with any outcome. In this study, only visual memory appeared to be associated with the risk factors of interest. Both radiotherapy and