ment includes surgical resection, craniospinal radiation (CSI) and chemotherapy. Children who receive standard photon radiation (RT) are at risk for cardiac toxicities. Potential late effects include coronary artery disease, left ventricular scarring and dysfunction, valvular damage and atherosclerosis. Current survivorship guidelines recommend routine ECHO surveillance for these patients but this comes at significant health care costs over a lifetime. We describe the experience of cardiac dysfunction in medulloblastoma survivors in a multi-institution study. METHODS: A retrospective chart review of medulloblastoma patients treated between 1980 and 2010 with radiation at Lurie Children's Hospital and Dana-Farber/ Boston Children's Hospital who had an echocardiogram done following completion of therapy. RESULTS: 168 patients were treated for medulloblastoma during the study time. Of whom, 80 patients had echocardiogram follow up and 76 received photon irradiation. The latter were included in the study. The mean age at CSI was 8.6 years (range 2.9- 20), and mean number of years post RT at echocardiogram 7.4 years (range 2–16). Mean ejection fraction (EF) was 60.03% and shortening fraction (SF) 33.8%. Four patients (5%) had abnormal results, all of which had EF<50%. CONCLUSION: Patients who received craniospinal irradiation for medulloblastoma therapy have relatively normal echocardiograms post treatment. Although RT may result in cardiac risks, echocardiograms may not be the most cost effective or efficacious mode to evaluate the risk in these survivors long term.

QOL-43. ENDOCRINE AND METABOLIC CHANGES IN CHILDREN TREATED FOR MEDULLOBLASTOMA

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We examined 63 patients (40 males/23 females) after complex treatment of medulloblastoma. Patients had a median age (range) of 11.3 (5.5 ÷ 17.9) years. The median time after the end of treatment was 3.7 (1.5 ÷ 11.6) years. Endocrine disorders were detected with the following frequency: growth hormone deficiency - 98.41% (62 of 63 patients), thyroid hormone deficiency – 69.8% (44/63), adrenal hormone deficiency - 17.4% (11/63). Three cases (4.7%) of premature sexual development were also detected. Lipids levels, beta-cell function and insulin resistance (IR) during 2-h oral glucose tolerance test were evaluated. A mono frequent bioelectrical impedanciometer was used to measure body composition. Overweight (SDS BMI> 1) was observed only in 16 patients (3 girls and 13 boys), obesity (SDS BMI> 2) in 1 boy. Dyslipidemia was found in 34 patients (54%). All patients underwent oral glucose tolerance test. Insulin resistance (ISI Matsuda <2.5 and/or HOMA-IR> 3.2) was detected in 7 patients (11/1%), impaired glucose tolerance (120 min glucose ≥7.8 mmol / l) was observed in 2 patients with IR and in 2 patients without IR. At the same time, IR and impaired glucose tolerance were encountered in only 5 children with overweight and no one with obesity. All patients with impaired glucose tolerance had normal values of fasting glucose (4.3 ÷ 5.04 mmol / l) and HbA1c (4.8 ÷ 5.8%). A bioelectrical impedanciometer was used to measure body composition in 49 cases, the percentage of adipose tissue was increased in 14 patients (28%) with normal BMI.

QOL-44. ASSESSMENT OF NEUROCOGNITIVE FUNCTION AND MRI PARAMETERS IN LONG-TERM SURVIVORS WITH POSTERIOR FOSSA TUMORS: A COMPARISON BETWEEN MEDULLOBLASTOMAS TREATED BY REDUCED-DOSE CRANIOSPINAL IRRADIATION AND OTHER TUMORS

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BACKGROUND: Children with medulloblastoma cannot avoid chemoradiotherapy including craniospinal radiation, although prognosis of medulloblastoma has improved and previous studies have reported a significant risk of intellectual disturbance by these treatments. We retrospectively analysed neurocognitive functions, clinical MRI parameters of patients with posterior fossa tumors, especially medulloblastomas. MATERIALS AND METHODS: Twenty-two patients (12 medulloblastomas, 5 ependymomas, 5 astrocytomas) treated in our institution were enrolled in this study. Mean age was 7.8 years and 6.5 years, percentage of hydrocephalus at onset was 66.7% and 60%, respectively in medulloblastoma group and in other tumor group (ependymoma and astrocytoma). Postoperative chemoradiotherapy including reduced-dose craniospinal irradiation (18Gy) was done for medulloblastoma group and local radiation or operation only was done for other group. Version 3 or 4 of Wechsler Intelligent Scale for Children (WISC) was used by neurocognitive function analysis. Ventricular size, white matter volume and other parameters were also was estimated based on MRI. Follow-up duration was 6–17 years (mean: 10.5 years). RESULTS: Evaluations of neurocognitive functions based on WISC pointed out lower performance IQ than verbal IQ in long term survivor of both group, especially working memory (P=0.05). Both hydrocephalus and cranial nerve complications was influenced lower scores of WISC, but age at onset did not influence WISC scores. Comparison between both group showed there was no significant difference about cognitive function and white matter volume. SUMMARY: Chemoradiotherapy including reduced-dose craniospinal irradiation and for medulloblastomas did not have significant risk increasing neurocognitive disfunction. But long-term follow-up and assessment of health-related quality of life are further needed.

QOL-46. LATE EFFECTS CARE FOR CHILDHOOD BRAIN TUMOUR SURVIVORS: A QUALITY IMPROVEMENT PROJECT

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BACKGROUND: Childhood and adolescent brain tumor survivors are at risk for considerable late morbidity and mortality from their disease and the treatment they receive. Surgery, chemotherapy, radiation therapy and tumor location all have the potential to impact the physical, psychological, functional and social health of these survivors. Comprehensive late effects care may mitigate these risks, but the necessary elements of this care model is unclear. We describe a quality-improvement initiative to improve the long-term follow-up (LTFU) care provided to brain tumour survivors at the McMaster Children's Hospital. METHODS: An anonymous needs assessment circulated to health providers was used to evaluate the LTFU practices. Utilizing this feedback as well as the LTFU guidelines from the Children's Oncology Group a care plan was made for these survivors. RESULTS: 17 of 33 (52%) health care staff responded to the survey, this included 70% physicians or nurse practitioners, and 30% nurses and allied health staff. Improvements suggested included consistent inclusion of additional care providers (i.e. social work, dietitians, endocrinology) reported by 76%, as well as a need for improved patient education and surveillance for late effects of therapy. CONCLUSION: Treatment summaries with surveillance care plans and LTFU resources were created for all survivors of childhood brain tumours at risk of treatment-related complications. Late effects counselling with distribution of these materials is ongoing as part of this quality improvement initiative. To provide comprehensive management, a neuro-oncology specific late effects programs with multi-disciplinary support is essential for the care of brain tumour survivors.

QOL-48. INTERDISCIPLINARY SPIRITUAL CARE TRAINING IN PEDIATRIC NEURO-ONCOLOGY

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INTRODUCTION: Pediatric neuro-oncology requires attention to not only cancer biology and therapeutics, but also to the suffering of the patient. In addressing patient suffering, consensus guidelines direct attention to the spiritual distress and resources of patients and families. A lack of training has been a key barrier to integrating this aspect of health into patient care. METHODS: A neuro-oncologist and a chaplain participated in a train the trainer for the Interprofessional Spiritual Care Education Curriculum (ISPEC) through the George Washington University's Institute for Spirituality and Health. After the train the trainer, the online curriculum was offered to interdepartmental team members, combined with in-person discussion groups, which met weekly for six sessions. A survey was given before and after the training, and Likert scores were analyzed using the Wilcoxon rank-sum non-parametric test. OUTCOMES: 17 interdisciplinary members participated in the training. These members included neuro-oncologists, neuro-surgeons, rehabilitation physicians, nurse practitioners, nurses, physical therapists, music therapists, a child life specialist, a school liaison, and a patient experience specialist. The training resulted in multiple improvements, including increased ability to identify spiritual issues (p=.0278) and increased ability to respond to these issues (p=.0056). CONCLUSION: ISPEC addressed a key barrier to providing generalist spiritual care to patients with pediatric brain tumors. Diverse disciplines were repre-