

age at radiotherapy, as well as their interaction, could be risk factors for altered neurodevelopmental patterns of brain areas associated with visual memory.

QOL-09. SYMON-SAYS: A SYMPTOM MONITORING AND REPORTING PROGRAM FOR CHILDREN WITH CANCER

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Unrelieved symptom burden due to cancer treatments can lead to poor psychosocial functioning and decreased health-related quality of life (HRQOL) for patients and their families. Barriers at the patient, healthcare provider and system levels can contribute to poor symptom management. Funded by the US National Cancer Institute, we have developed the Symptom Monitoring & Systematic Assessment and Reporting System in Young Survivors (SyMon-SAYS) program. SyMon-SAYS is a technology-based program with the potential to minimize symptom management barriers by routinely collecting and interpreting patient-reported outcomes in pediatric oncology ambulatory settings in a manner that is efficient, actionable by clinicians, supports engagement of patients and families with their health and care, and improves clinical processes and outcomes. This is a single institution modified waitlist control 16-week randomized trial of 200 children (ages 8-17) with cancer and their parents/guardians. Participants in the intervention phase will complete a symptom checklist weekly via the electronic health record patient portal. Scores exceeding a pre-defined threshold will trigger an alert to the treatment team, which will review the report and take appropriate actions. Participants will complete a separate battery of questionnaires assessing HRQOL at baseline and weeks 8 and 16. The recruitment is in progress. As of today, we have recruited 57 patients/parents. 29 completed 16-week study (15 intervention & 14 wait-list). Preliminary results showed SyMon-SAYS system was easy (92%) and convenient (85%) to use. Parents were satisfied (74.1%) with the SyMon-SAYS program. Comparing to the waitlist control, intervention group parents reported significantly less concerns on not having enough time to discuss their child's symptoms with treating clinicians ($p=0.0022$), and disagreed that it is not necessary to treat their child's symptoms as they will go away ($p=0.04$). We anticipate completing the recruitment by the end of 2023.

QOL-10. TREATMENT-INDUCED LEUKOENCEPHALOPATHY IN PEDIATRIC MEDULLOBLASTOMA SURVIVORS AND ITS IMPACT ON LONG-TERM NEUROCOGNITIVE FUNCTIONING

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OBJECTIVES: Leukoencephalopathy (LEP, i.e. white matter T2-/FLAIR-hyperintensities on MRI) and impaired neuropsychological outcome are side effects of multimodal therapy of medulloblastoma. We identified risk factors for LEP and correlated LEP with neurocognitive functioning. **PATIENTS AND METHODS:** Severity of LEP either at the end of therapy ($n=118$), two years ($n=126$), or five years after surgery ($n=139$) was evaluated according to an adapted Fazekas classification for 162 survivors of medulloblastoma (median age: 7.4 years [range:0.67-19.8 years]). Severity of LEP two or five years after surgery was correlated with treatment and neurocognitive functioning \geq five years after diagnosis using univariate analyses and multivariate generalized mixed linear models. **RESULTS:** Two and five years after surgery, incidences of mild/moderate/severe LEP were 21.4%/17.5%/9.5%, and 24.5%/23.7%/8.6%, respectively. Data on severity of LEP both at the end of therapy and five years after surgery was available for 103 patients: LEP grades increased for 1/2 degrees in 18/4 patients and decreased in 13/1 patients, respectively. Both treatment approaches - HIT-SKK chemotherapy including intraventricular methotrexate (SKK) and craniospinal irradiation (CSI) - were associated with increased severity of LEP (CSI+SKK > SKK only > CSI only; $p<0.001$). Severe LEP only occurred in patients treated with both CSI and SKK. In total 19% of all patients treated with this combination developed severe LEP. Severe LEP correlated with impaired fluid ($p=0.013$) and crystalline ($p=0.012$) intelligence and short-term memory ($p=0.024$) on both univariate level and in multivariate mixed linear models. Among patients treated with CSI doses >30Gy, severe LEP, but not SKK including intraventricular MTX, correlated with impaired neurocognitive functioning. **CONCLUSION:** After therapy strong changes in LEP rarely occurred. Severe LEP was associated both with the combination of SKK and CSI, and impaired neurocognitive functioning. Further research will be needed to weigh potential benefits of SKK including intraventricular methotrexate with CSI against its neurotoxicity.

QOL-11. COMPARISON OF NEUROPSYCHOLOGICAL FUNCTIONING IN PEDIATRIC POSTERIOR FOSSA TUMOR SURVIVORS: MEDULLOBLASTOMA, LOW-GRADE ASTROCYTOMA, AND HEALTHY CONTROLS

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BACKGROUND: Neuropsychological comparison of medulloblastoma (MB) and cerebellar low-grade astrocytoma (LGA) survivors to controls can clarify treatment-related neurocognitive late effects. While both brain tumor groups undergo surgery to the posterior fossa, children with MB additionally receive craniospinal irradiation with boost and chemotherapy. This study provides an updated comparison of neuropsychological functioning in these two groups and examines effects of demographic risk factors upon outcomes. **PROCEDURE:** Forty-two children (16 MB, 9 LGA, 17 controls) completed measures of intellectual functioning, verbal learning/memory, visual-motor integration, and fine motor functioning. The effects of age at diagnosis, time since diagnosis, gender, fatigue, and social status on neuropsychological functioning were examined. **RESULTS:** MB survivors demonstrated the worst neurocognitive late effects, but they were less severe and extensive than in prior studies. LGA survivors' mean scores were below normative expectations in working memory, processing speed, and fine motor functioning. Additionally, parents of LGA survivors reported the most difficulty with behavior and cognitive regulation compared to healthy controls and medulloblastoma survivors. In this overall sample, processing speed difficulties were independent of fine motor functioning and fatigue. Higher parental education was associated with better intellectual functioning, working memory, delayed recall, and visual-motor integration. Neuropsychological function was not associated with gender, age at diagnosis, or time since diagnosis. **CONCLUSION:** The results support that contemporary treatment approaches with craniospinal irradiation plus boost and chemotherapy confer the greatest risk for late effects, while surgical resection is associated with subtle but important neurocognitive difficulties. Ultimately, this study furthers our understanding of factors impacting neuropsychological function in pediatric MB and LGA survivors and contributes to empirical support for close monitoring and targeted interventions into survivorship.

QOL-12. RELAXATION TECHNIQUE OF IMAGERY BASED STORY TELLING REDUCES MANIFESTATION OF ANXIETY IN CHILDREN AND ADOLESCENTS UNDERGOING BRAIN TUMOR SURGERY

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