

5 The Relationship Between Perceived Cognitive Impairment and Various Psychosocial Factors Following Cancer Treatment

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Objective: From diagnosis to remission, a patient's journey with cancer can be long and tiresome, riddled with many adjustments and challenges. Because the stressors of the disease continue into remission, the battle is far from over when the cancerous cells are eradicated. The stress placed on cancer patients due to the disease and the treatments to control it causes many patients to experience cognitive impairment, also known as cancer-related cognitive impairment (CRCI). Researchers have long been baffled by CRCI and the mechanisms through which it takes place. Some explanations that have arisen include the cancer treatment, the cancer itself, the psychological distress, or a combination of all three. The objective of this study was to understand the mechanism through which CRCI occurs and what factors, including psychosocial, treatment, and demographic variables, exacerbate or reduce the cognitive symptoms.

Participants and Methods: Cancer survivors (n=39) with various types of cancer were recruited from support groups to complete an online survey, which was comprised of a series of self-report measures. These measures included perceived cognitive abilities, psychological distress, fatigue, social support, and demographic and treatment questionnaires.

Results: Cognitive reserve ($p < .05$) and the presence of chemotherapy ($p < .01$) were the only variables that predicted perceived cognitive impairment. As expected, it was found that the length of time in remission led to lower levels of perceived cognitive impairment ($p < .001$). However, psychological distress was not found to be a significant predictor of perceived cognitive impairment as hypothesized. Remarkably, psychological distress was found to be a mediator in the relationship between perceived cognitive impairment and fatigue ($p < .001$).

Conclusions: This relationship indicates that how an individual copes with the cognitive impairment following cancer treatments can lead to the development and exacerbation of fatigue. A failure to manage psychological health can lead to the worsening of these secondary symptoms. Further research must examine the link between psychosocial factors as they relate to the subtle effects of CRCI.

Categories: Cancer

Keyword 1: neuro-oncology

Keyword 2: quality of life

Keyword 3: cognitive functioning

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6 Feasibility and Perceived Benefit of an Interdisciplinary Rehabilitation Approach within a Tertiary Pediatric Hematology/Oncology Setting

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Objective: Medulloblastoma is the most common pediatric malignant brain tumor. Approximately 29% of medulloblastoma patients experience postoperative posterior fossa syndrome (PFS) characterized by impairments in speech, motor, and mood. An interdisciplinary rehabilitation approach is associated with greater rehabilitation gains than a single discipline approach for brain injury patients with significant rehabilitation needs. However, literature regarding the feasibility and utility of this approach within a tertiary care pediatric hematology/oncology setting is lacking. The Acute Neurological Injury (ANI) service was developed to coordinate care for neurologically complex hematology/oncology patients receiving active cancer treatment, including those with PFS. ANI care coordination includes bimonthly interdisciplinary team meetings, interdisciplinary goal implementation for each patient, parent psychoeducation about applicable brain-behavior relationships (including PFS) at

treatment initiation, neuropsychological assessment at transition times throughout treatment, cognitive remediation, and coordinated end of treatment transition planning. We gathered caregiver perspective on this approach within a tertiary care pediatric hematology/oncology setting.

Participants and Methods: Parents of children and young adults (ages 4-20) with PFS after medulloblastoma resection who received coordinated care as part of the ANI program (n=20) were interviewed at least 4 months following completion of cancer treatment. 75% experienced postoperative mutism while the remainder experienced significantly decreased speech without mutism. All received cranial-spinal irradiation and focal boosts to tumor sites followed by chemotherapy per multi-institutional treatment protocol. Caregivers were interviewed regarding perceived feasibility and utility of ANI program components including parent psychoeducation, neuropsychological assessment, cognitive remediation, and interdisciplinary team coordination/goal setting, as well as parental supports. Yes/no responses were gathered as well as responses regarding the perceived utility of aspects of the interdisciplinary ANI program approach via a five-point Likert scale.

Results: Surveys were completed by 66% of families contacted. Mean age at first contact with neuropsychology as part of the ANI program was 9.45 years (SD=4.4 years). Mean time between end of treatment and parent interview was 3.20 years (SD=2.01 years). Most parents reported that initial psychoeducation about PFS helped to decrease their concerns (81%) and increased their understanding of their child's functioning in the context of PFS (88%). They reported benefit from neuropsychological assessment reports prior to initiating adjuvant treatment (92%), at end of treatment (90%), and one year following initiation of cancer treatment (100%), though they perceived less benefit from assessments intended to inform provider interventions during treatment (81% and 66%). Reports were shared most often with schools (75%), behavioral therapists (50%), physicians (50%), and rehabilitation specialists (25%). Parents indicated that the interdisciplinary ANI program approach was helpful (94%) and the coordinated interdisciplinary goal was beneficial (92%). Most parents favored the weekly frequency of cognitive remediation sessions (83%). Much interest was voiced in establishing a formal mentoring program to offer peer

support by parents whose children have previously experienced PFS to those acutely managing a new PFS diagnosis (95%). Of note, all participants indicated that they would be willing to serve in a peer mentor role (100%).

Conclusions: The interdisciplinary ANI program approach is feasible with perceived benefits to families managing new PFS and medulloblastoma diagnoses and receiving active cancer treatment.

Categories: Cancer

Keyword 1: brain tumor

Keyword 2: pediatric neuropsychology

Keyword 3: cognitive rehabilitation

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7 Cognitive Functioning Among Patients Undergoing CAR T-Cell Therapy

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Objective: Chimeric antigen receptor (CAR) T-cell therapy is a novel treatment approach for refractory hematological malignancies. Risk factors for cognitive changes have been identified with CAR-T cell therapy, including severe cognitive problems due to neurotoxicity. Given the novelty of this treatment, research on this topic remains limited. Only one known study has examined cognitive performance following CAR T-cell therapy among patients diagnosed with non-Hodgkin's lymphoma and observed a pattern of initial decline in executive functioning and visuospatial skills with improvement towards baseline one year following treatment. Additional research is needed to understand cognitive functioning in the context of CAR T-cell therapy. Our study presents preliminary descriptive longitudinal cognitive data among a small cohort of patients with mixed cancers undergoing CAR-T cell therapy.

Participants and Methods: Adult patients undergoing CAR T-cell therapy (N=16) completed the NIH-Toolbox core cognitive battery prior to treatment, and at 100-, 180-, and one-year post-treatment. Subtests of the Weschler Abbreviated Scale of Intelligence (WASI-II; block design, vocabulary) and the