

impairment (CogPCI), perceived cognitive abilities (CogPCA), or comments from others (CogOth) subscales. However, the TICS memory item, a 10-word list immediate recall task, had a weak statistically significant correlation with CogPCI ($r = 0.237, p < 0.032$), CogOth ($r = 0.223, p < 0.044$), and CogPCA ($r = 0.233, p < 0.036$). Next, the sample was divided based on the participant's score on TICS memory item (i.e., $<$ vs. $>$ sample mean of 5.09). Results of independent samples t-tests demonstrated significant differences in mean scores for CogPCI, $t(80) = -2.09, p = 0.04, M_{diff} = -7.65$, Cohen's $d = 0.483$, and CogQOL, $t(80) = -2.57, p = 0.01, M_{diff} = -2.38$, Cohen's $d = 0.593$. A hierarchical linear regression found that DTS subscale and total scores did not significantly predict performance on the TICS. However, DTS continued to be a significant predictor of poorer FACT-Cog PCI scores while controlling for TICS scores.

Conclusions: We found a weak relationship between self-reported cognitive impairment and objective cognitive performance (TICS). However, greater self-reported PCI and its impact on QOL was found in participants who scored below the sample mean on a recall task from the TICS. Although perceived ability to tolerate distress continued to predict self-reported PCI on the FACT-Cog, it did not predict overall performance on the TICS. Therefore, responses on the FACT-Cog may be more representative of an individual's ability to tolerate distress related to perceived CRCI than actual overall cognitive ability or impairment.

Categories: Cancer

Keyword 1: breast cancer

Keyword 2: cognitive functioning

Keyword 3: self-report

Correspondence: Estefany Saez-Clarke, University of Miami Department of Psychology, Sylvester Comprehensive Cancer Center, esaezclarke@miami.edu

9 Exploration of Predictors of Cognitive Flexibility Performance in Long-Term Survivors of Childhood Brain Tumor

Holly A Aleksonis, Naveen Thourani, Tricia Z King

Georgia State University, Atlanta, GA, USA

Objective: Survivors of childhood brain tumor are historically thought to perform worse on measures of executive functioning, including cognitive flexibility (CF; e.g., set-shifting), when compared to their peers. Commonly utilized measures, such as subtests from the Delis-Kaplan Executive Function System (D-KEFS), have baseline conditions that attempt to measure performances independent of but critical for CF tasks (e.g., motor speed on trail making, letter fluency on verbal fluency). However, in research, conditions measuring CF are often included in analyses without accounting for these important baseline conditions. The aim of the current study is to explore differences in CF performance between survivors and their healthy peers when controlling for baseline conditions. The variance explained by each baseline condition on CF condition performance in survivors is also explored.

Participants and Methods: A sample of 107 long-term survivors of childhood brain tumor ($M_{age}=21.81, SD=5.99, 50.5\%$ female) and 142 healthy controls ($M_{age}= 23.25, SD=6.61, 61.3\%$ female) were administered the Trail Making Test (TMT), Color-Word Interference (CWI), and Verbal Fluency (VF) subtests from the D-KEFS. For the TMT, baseline conditions include visually scanning for a target, motor speed, and letter and number sequencing. For the CWI subtest, baseline conditions include rapid color naming, word reading, and reading words in a different colored ink. On the VF subtest, baseline conditions include rapidly naming words with a specific letter and from a specific category. An analysis of covariance was conducted for each subtest to determine if groups differed in performance on the CF condition (i.e., Number-Letter Switching, Inhibition/Switching, Category Switching Accuracy) when controlling for baseline conditions. In survivors only, linear regressions investigated the amount of variance explained by each baseline condition on the CF conditions of each subtest.

Results: Groups did not differ in CF performance of each subtest when controlling for baseline conditions ($ps > .10$). Across subtests, baseline conditions significantly predicted CF performance in survivors. On the TMT, Letter Sequencing ($p = .003, unique-R^2 = .05$), but not Visual Scanning, Number Sequencing, or Motor Speed, was a significant predictor of Number-Letter Sequencing performance ($p < .001, R^2 = .50$). On the CWI subtest, Word Reading ($p < .001, unique-R^2 = .09$)

and Inhibition ($p < .001$, unique- $R^2 = .05$), but not Color Naming, were significant predictors of Inhibition/Switching performance ($p < .001$, $R^2 = .67$). On the VF subtest, Letter Fluency ($p = .009$, unique- $R^2 = .06$) and Category Fluency ($p < .001$, unique- $R^2 = .08$) were significant predictors of Category Switching Accuracy performance ($p < .001$, $R^2 = .37$).

Conclusions: Findings suggest that CF may not differ between survivors and their healthy peers, but that other factors of executive functioning, such as processing speed, drive performance differences on measures of CF. As these tasks rely heavily on speed, survivors may be slower than their healthy counterparts, but may not perform worse on set-shifting. In addition, these results highlight the importance of controlling for lower-order processes in analyses to help isolate CF performance and more accurately characterize potential differences between groups. While replication of findings in survivors and other clinical groups (e.g., congenital heart disease, traumatic brain injury) is still needed, this work can help inform which processes are most important to account for, which is not yet established.

Categories: Cancer

Keyword 1: brain tumor

Keyword 2: executive functions

Keyword 3: neuropsychological assessment

Correspondence: Holly A. Aleksonis, M.A., Department of Psychology, Georgia State University, Atlanta, GA, haleksonis1@student.gsu.edu

10 Comprehensive Neuropsychological Findings in Erdheim-Chester Disease: Case Report

Isabel Solis^{1,2}, Myron Goldberg¹

¹University of Washington School of Medicine, Seattle, WA, USA. ²University of New Mexico, Albuquerque, NM, USA

Objective: Erdheim-Chester disease (ECD) is a rare disorder characterized by excessive production and accumulation of histiocytes within multiple tissues and organs. ECD primarily affects adults, and symptoms vary depending upon the specific location and severity. Etiology is not always known, but some patients with ECD may have a non-inherited

genetic change that allows histiocytes to reproduce uncontrollably. Currently, the cognitive outcomes of ECD are not well understood, and there are no previous neuropsychological findings in the literature. Thus, the objective of this case study was to describe the neuropsychological presentation and findings of an ECD case to inform diagnosis and treatment better.

Participants and Methods: The patient was a 64-year-old white, non-Hispanic, right-handed man diagnosed with ECD in 2017. ECD accounted for a constellation of medical problems, including diabetes insipidus, hypogonadism, and interstitial lung disease. A brain MRI in 2018 revealed orbital nodularities and pituitary infiltration thought to be consistent with ECD. The patient first noticed cognitive functioning difficulties in 2020 primarily related to short-term memory. Approximately two years later, he noted significant cognitive changes, including difficulties recalling recent events, dates, and conversations, problem-solving, and planning. He had difficulty driving and had two recent car accidents when leaving his driveway. Physically, he reported increased fatigue, unsteadiness, and occasional falls. In 2022, he had a brain MRI that demonstrated a progression of multiple diffuse cerebral, cerebellum, and brainstem lesions and cerebral volume loss compared to prior imaging. He was referred for a neuropsychological assessment to rule out a neurodegenerative disorder.

Results: Neuropsychological data demonstrated moderate-to-severe deficits on tests of basic spatial working memory, visually based processing speed, visual memory, letter verbal fluency, and semantic verbal fluency. He demonstrated mild-to-moderate deficits on tests of basic auditory attention, verbal memory, higher-level visuospatial processing, abstract nonverbal reasoning, multistep, organization and planning, self-monitoring of performance quality, and fine hand and motor dexterity. He demonstrated variable initial learning of new information across modalities, although he did benefit from structured verbal material. Recognition was variable, with difficulty demonstrated in discriminating visual information presented, from similar competing information, along with availability recalling visual information. He showed average auditory-based divided attention, confrontational object naming, and abstract verbal reasoning. Regarding his emotional functioning, he reported mild depressive and anxiety symptoms.