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EPIDEMIOLOGY

The Relationship between Cancer Diagnosis Timing and Cognition in Older Adults in the National Health and Nutrition Examination Survey

Annie Chen[1] | Erin J Aiello Bowles[2] | Jessica Chubak[2] | Stephanie Cosentino[1] | Jeanine M Genkinger[1] | Deborah A Levine[3] | Parisa Tehranifar[1] | Katrin Wolfova[1,4] | **Sarah E. Tom**[5]

[1]Columbia University, New York, NY, USA

[2]Kaiser Permanente Washington Health Research Institute, Seattle, WA, USA

[3]University of Michigan, Ann Arbor, MI, USA

[4]Charles University, Prague, Czech Republic

[5]Columbia University Irving Medical Center, New York, NY, USA

Correspondence
Sarah E. Tom, Columbia University Irving Medical Center, New York, NY, USA.
Email: st3144@cumc.columbia.edu

Abstract

Background: Cancer diagnosis is related to poor short-term cognition, reflecting the condition, stress, and management. Less is known about long-term relationships between time since cancer diagnosis and cognition. We evaluated the association between recency of cancer diagnosis and cognition.

Method: The National Health and Nutrition Examination Survey is a nationally representative, cross-sectional survey of community-dwelling people in the United States. In 2011-2012 and 2013-2014, the study included questions on the timing of cancer diagnosis. Participants age ≥ 60 years completed the Digit Symbol Substitution Test and the Consortium to Establish a Registry for Alzheimer's Disease Total Learning Test and Recall Test. Our analytic sample included individuals age ≥ 60 years who reported a cancer diagnosis and completed all cognitive tests. We calculated z-scores for each cognitive test and a global score (sum across individual z-scores). We used linear regression to assess the relationship between time since cancer diagnosis (current -5 years, >5 years) and cognition. We estimated an age and sex-adjusted model and included potential confounders in a series of nested models, with each step adding: race and ethnicity, education level, marital status, and health insurance status. Analyses were weighted such that results represent the US community-dwelling population.

Result: The analysis sample included 477 participants who ever had a cancer diagnosis, excluding unknown and non-melanoma skin cancers, corresponding to an implied population of 9,027,595 (including 11% melanoma skin, 23% breast, 16% prostate) with a mean age of 71.2 years (SD = 6.6). A total of 31% of participants reported a cancer diagnosis within the past five years. Demographic characteristics were similar

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based on cancer diagnosis timing. Adjusting for age and sex, participants greater than five years from cancer diagnosis had a higher cognition level, compared to those with a cancer diagnosis within five years (coefficient = 0.22, 95% CI = 0.05, 0.39). Results were similar when adjusting for additional covariates.

Conclusion: Among older adults who ever had a cancer diagnosis, a diagnosis that occurred more than 5 years ago was related to better cognition. Future studies should investigate the roles of cancer site, treatments, and stage at diagnosis in this relationship.