Cognitive Impairment in Older Breast Cancer Survivors: A comprehensive review of the literature

Adele Crouch, BSN, RN and Diane Von Ah, PhD, RN, FAAN

Introduction

- Up to 75%, of the more than 3.5 million breast cancer survivors (BCS) living in the US, report cognitive impairment (CI) after cancer treatment.
- Of those BCS, nearly 60% are 65 years of age and older and that number is expected to grow.

Objectives

The objectives of this review were to:

1. Describe the incidence of CI in older BCS
2. Identify the cognitive domains impacted and measures used to assess CI
3. Determine factors associated with CI in older BCS

Methods

- 4 electronic databases were searched using the terms: breast cancer survivor, cognitive impairment or dysfunction, older, elderly, and geriatrics.
- Eligibility: studies published in peer-reviewed journals, written in English, measured CI (subjective or objective), BCS ≥ 65 years of age.
- Studies focused on BCS with metastasis or dementia were excluded.

PRISMA Diagram of Search Strategy

Conclusions

- Findings indicate that CI is a common problem among older BCS.
- Healthcare providers should be aware of the prevalence of CI in older BCS, as well as the factors that may be associated with CI.
- The use of consistent definitions and measures in future research is warranted to increase generalizability and comparability of research

Results

Study Characteristics

- 7 quantitative studies met inclusion criteria.
- 5 used prospective and 2 cross-sectional designs.

Cognitive Impairment Incidence

- Before treatment, incidence of CI ranged between 11%-41% using objective measures and 6%-64% using subjective measures.
- 7%-49% of BCS saw an objective cognitive decline from pre- to post-treatment in varying cognitive domains.

Cognitive Domains Impaired

- 4 cognitive domains and general cognition were assessed using 20 measures—both objective and subjective.
- Domains assessed included: memory, executive functioning, speed of processing, and language/verbal functioning.
- Memory was the most common domain measured and impaired, consistent with the larger BCS and aging literature.

Factors Associated with Cognitive Impairment

- Main factors associated with CI were age, comorbidities, treatment, depression, anxiety, fatigue, & QOL

Key References

- 1.Freedman RA, et al. (2013). Cognitive function in older women with breast cancer treated with standard chemotherapy and capecitabine on Cancer and Leukemia Group B 49907. *Breast Cancer Res Treat.* 139(2):607-16.
- 2.Hurria A, Rosen C, et al.(2006). Cognitive function of older patients receiving adjuvant chemotherapy for breast cancer: A pilot prospective longitudinal study. *Journal of the American Geriatrics Society.* 54:924-31.
- 3.Hurria A, Goldfarb S, et al. (2016). Effect of adjuvant breast cancer chemotherapy on cognitive function from the older patient's perspective. *Breast Cancer Res Treat.* 98(3):343-48.
- 4.Lange M, Giffard B, et al. (2014). Baseline cognitive functions among elderly patients with localised breast cancer. *Eur J Cancer.* 50(13):2181-89.
- 5.Lange M, Heutte N, et al. (2016). Decline in Cognitive Function in Older Adults With Early-Stage Breast Cancer After Adjuvant Treatment. *Oncologist.* 21(11):1337-48
- 6.Mandelblatt, J., et al.(2016). Long-term trajectories of self-reported cognitive function in a cohort of older survivors of breast cancer: CALGB 369901 (Alliance). *Cancer.*122(22):3555-63.
- 7.Yamada, T., et al. (2010). Neuropsychological outcomes of older breast cancer survivors: cognitive features ten or more years after chemotherapy. *J Neuropsychiatry Clin Neurosci.* 22(1):48-54.