

Background

Chemotherapy treatment has been known to cause cognitive changes that manifest as forgetfulness, foggy, or loss of memory.[1] There has been some research on the onset, severity, and trajectory of these cognitive changes, oftentimes called “Chemobrain” in breast cancer patients, but little research has been done in patients with other types of cancer.[5] The objective of the study was to test the feasibility and validity of cognitive assessments that have been used in other areas of oncology to determine the onset and course of cognitive symptoms associated with “Chemobrain,” so nurses can better understand how to interact with patients experiencing adverse cognitive symptoms that may arise from Chemotherapy.

Methods

This multisite, prospective, non-randomized, observational, pilot feasibility study enrolled patients who were undergoing therapy at the time of the study. Eligible patients were recruited and consented from two outpatient chemotherapy clinics in a large metropolitan area. Patients completed the General Practitioner Assessment of

Table 1. Demographics

Variable	Measure
Age*	61.7 (11.0)
Sex ^Δ	
Female	27 (55.1%)
Male	22 (44.9%)
Ethnicity ^Δ	
Hispanic	6 (12.2%)
Non-Hispanic	43 (87.8%)
Race ^Δ	
Caucasian	45 (91.9%)
African American	2 (4.1%)
Asian	1 (2.0%)
Mixed race	1 (2.0%)
Number of cycles*	4.2(4.2)
Prior Radiation Tx ^Δ	
Yes	6 (12.2%)
No	43 (87.8%)

*mean and standard deviation

^ΔNumber and percent

Table 2. Cognitive Test Means

	Baseline (n=49)	4-month (n=33)	8-month (n=28)	p-value
GPCOG*	7.65 (1.38)	7.88 (1.24)	7.96 (1.14)	0.5425
Trail Making A	38.1 (16.97)	33.0 (14.26)	31.08 (9.31)	0.0917
Trail Making B	97.07 (57.66)	78.06 (29.37)	81.35 (40.24)	0.1485

References

1. Wang XM, Walitt B, Saligan L, Tiwari AF, Cheung CW and Zhang ZJ. Chemobrain: a critical review and causal hypothesis of link between cytokines and epigenetic

Results

Of 55 patients enrolled, 49 were included in the data analysis (1 subject opted out after enrollment). Subjects were primarily female (55%) with a mean age of 62 years; half of the subjects were enrolled on their first or second cycle of chemotherapy (range 1-16) and 27 completed the 8-month follow-up (14 lost to follow up and 8 died). There was no association between age, nor number of chemotherapy cycles and change in cognitive scores using simple regression ($p > 0.05$). After controlling for age, the number of cycles was a predictor of lower Trailmaking B ($p=0.006$) scores; and approached significance for GP COG ($p=0.136$), Trailmaking A ($p=0.113$) scores.

Conclusion

Although not powered to detect statistical significance, this pilot study provides evidence of a real change in cognitive scores over time not entirely attributable to age. Nurses can use the Trailmaking and GPCOG to assess for cognitive changes in patients undergoing chemotherapy. Additional research is needed to better understand the trajectory and impact of “Chemobrain” on