

EFFECT OF BRIGHT LIGHT ON FATIGUE IN BREAST CANCER**S. Ancoli-Israel^{1,2,3}, V. Trofimenko^{1,2}, M. Rissling³, L. Natarajan⁴, F. He⁴, L. Liu^{1,2}**¹Department of Psychiatry, University of California, San Diego; ²VASDHS; ³SDSU/UCSD JDP in Clinical Psychology; ⁴Department of Family and Preventive Medicine

Objectives: Women with breast cancer complain of poor sleep and fatigue before and during chemotherapy. We have shown that women undergoing chemotherapy have little bright light exposure, yet it is known that bright light can improve sleep and might have an alerting effect. We present preliminary data from an on-going study that addresses whether bright light improves sleep and fatigue in women with breast cancer undergoing chemotherapy.

Methods: 20 women (mean age=52.6 years, SD=8.7, range: 32-70 years) diagnosed with stage I–III breast cancer were randomized into two treatment groups: bright white light (BWL; n = 10) or dim red light (DRL; n = 10). Each woman was instructed to self-administer light therapy with Litebook for 30 minutes every morning during their first 4 cycles of anthracycline-based chemotherapy. Sleep/wake activity was recorded with actigraphy (Ambulatory Monitoring, Inc. and Mini-Mitter, Respironics) for 72-hours at baseline (pre-chemotherapy) and during cycles 1 and 4. Fatigue was assessed with the Multidimensional Fatigue Symptom Inventory – Short Form (MFSI-SF) pre-chemotherapy (baseline, BL) and during cycle 4 week 1 (C4W1). Mixed models were developed with group, cycle of chemotherapy, and the group-phase interaction included as covariates.

Results: In general, sleep and fatigue either improved or remained the same in the BWL group, but got worse in the DRL group (p<0.005).

	BWL (n=10)		DRL (n=10)	
	Baseline (mean [SD])	Cycle 4 (mean [SD])	Baseline (mean [SD])	Cycle 4 (mean [SD])
Total sleep time (min)	407 [95]	429 [81]	448	426
Wake time after sleep onset (min)	101 [72]	89 [40]	70 [33]	81 [44]
Fatigue (lower is better)	17.6 [8.5]	15 [7.1]	-1 [4.3]	19.1 [9]

Conclusions: Preliminary results suggest that bright white light may prevent a worsening of sleep and fatigue in women with breast cancer undergoing chemotherapy. We continue to collect data to examine the relationship between sleep, fatigue and light exposure.

Keywords: Light, Cancer, Chemotherapy, Sleep, Fatigue

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