Effects of a multidisciplinary quality of life intervention on sleep quality in patients with advanced cancer receiving radiation therapy

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Background

Sleep disturbances are quite prevalent in cancer patients, especially for those with advanced disease.[1] Most intervention studies to improve sleep in cancer populations have been in early stage cancer patients. There are few psychosocial or pharmacological intervention studies to address sleep issues in patients with advanced cancer or receiving active cancer treatment. [2]

Study Aims

This study assesses the impact of a multidisciplinary quality of life (QOL) intervention on subjective sleep difficulties in patients with advanced cancer.

Methods

- A multidisciplinary intervention targeting five domains of QOL (physical, mental, social, spiritual, and emotional) was developed for patients with advanced cancer receiving radiation therapy. [3]
- 117 patients were enrolled and were randomly assigned to intervention (n = 54) or standard care (n = 63).
- The intervention group attended six intervention sessions while the standard care group received informational material only.
- Questionnaires to assess sleep difficulties and daytime sedation, the Pittsburgh Sleep Quality Index (PSQI) and Epworth Sleepiness Scale (ESS), were administered at baseline, and weeks 4 (post intervention), 27 and 52.

Patient Population

Age		Gender	
Mean (SD)	59.8 (11.0)	Female	39 (33.3%)
Median	60.0	Male	78 (66.7%)
Performance Score		Planned Treatment	
Fully Active	62 (53.0%)	Radiation	18 (15.4%)
Restricted	52 (44.4%)	Chemotherapy	1 (0.9%)
Ambulatory	3 (2.6%)	Both	98 (83.8%)
Dominant Disease Status		Tumor Grade	
Brain	25 (21.4%)	1-2	13 (11.1%)
Head & Neck	17 (14.5%)	3	50 (42.7%)
Lung	17 (14.5%)	4	35 (29.9%)
GI	44 (37.6%)	5	19 (16.2%)
Other	14 (12.0%)		

Results

The intervention group reported better PSQI sleep quality than the control group at week 4 (p = 0.04). Although both groups showed improvements in sleep measures from baseline, there were no statistically significant differences between groups in any of the PSQI component scores, PSQI total score or ESS at week 27. At week 52, the intervention group used less sleep medication than control patients compared to baseline (p = 0.04).

Pittsburgh Sleep Quality Index

	Week 0			Week 4		
	Intervention	Control	p value	Intervention	Control	p value
	n	n		n	n	
	(N=54)	(N=63)		(N=54)	(N=63)	
Sleep Quality	1.1 (0.7)	1.0 (0.7)	0.25	0.9 (0.6)	1.0 (0.8)	0.67
Sleep Quality Change				-0.2 (0.6)	0.0 (0.7)	0.04
Sleep Latency	1.2 (1.0)	0.9 (0.8)	0.08	1.1 (0.8)	0.9 (0.9)	0.11
Sleep Latency Change				-0.2 (0.9)	0.0 (0.8)	0.44
Sleep Duration	0.4 (0.7)	0.4 (0.8)	0.91	0.3 (0.6)	0.4 (0.8)	0.77
Sleep Duration Change				-0.1 (0.5)	0.0 (0.9)	0.59
Sleep Efficiency	0.8 (1.0)	0.7 (1.0)	0.42	0.7 (1.0)	0.6 (0.9)	0.74
Sleep Efficiency Change				0.0 (1.1)	-0.1 (1.0)	0.86
Sleep Disturbance	1.6 (0.6)	1.6 (0.5)	0.74	1.6 (0.6)	1.6 (0.6)	0.50
Sleep Disturbance Change				0.0 (0.5)	-0.1 (0.7)	0.30
Sleep Medication	1.1 (1.4)	0.9 (1.2)	0.49	0.9 (1.4)	1.1 (1.3)	0.52
Sleep Medication Change				-0.2 (1.2)	0.1 (1.1)	0.13
Daytime Dysfunction	1.0 (0.7)	0.9 (0.6)	0.63	0.9 (0.6)	1.3 (0.8)	0.01
Daytime Dysfunction Change				-0.1 (0.7)	0.3 (0.8)	<0.01
PSQI Total	7.3 (3.5)	6.4 (3.1)	0.15	6.5 (3.2)	6.6 (3.4)	0.94
PSQI Total Change				-0.7 (2.7)	0.3 (2.8)	0.04

Epworth Sleepiness Scale

Week	Intervention	Control	P-value
0	7.3	8.2	0.21
4	7.6	8.7	0.14
27	7.5	8.4	0.15
52	7.6	9.3	0.03

Conclusions

- This intervention helped improved some domains of subjective sleep quality of cancer patients undergoing radiation therapy.
- Given the multifactorial etiology of sleep disturbances and the profound need for sleep intervention studies in advanced cancer patients, future clinical trials should incorporate multidisciplinary interventions to address QOL, sleep quality and their impact on long term survival.

References/Contact

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