

Patient-Reported Outcome Measures and Insomnia in Head and Neck Cancer Survivorship

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Introduction

Limited data exists examining the impact that physical symptoms and treatment-related effects have on sleep quality in Head and Neck Cancer (HNC) survivors.

The purpose of this project was to 1) identify the prevalence of insomnia and 2) explore the association between insomnia and validated patient-reported outcome measures (PROMs) in HNC survivors.

Methodology

A cross-sectional study was conducted with HNC survivorship patients evaluated in follow-up from September 2018 to September 2019.

Inclusion criteria individuals diagnosed with primary squamous cell carcinoma of the oral cavity, oropharynx, or laryngopharynx, who were post-treatment.

Exclusion criteria individuals who were pre-treatment status, currently undergoing treatment, other primary sites, other histology, recurrence or second primary

Patients were categorized into 3 different insomnia groups based on Insomnia Severity Index (ISI) survey scores: no insomnia (0-7), subthreshold insomnia (8-14), and clinical insomnia (>14).

Multivariate analysis with regression coefficients was used to evaluate relationships between insomnia and PROMs such as

- University of Washington QOL Questionnaire (UWQOL)
- Functional Oral Intake Scale (FOIS)
- Eating Assessment Tool (EAT-10)
- Generalized Anxiety Disorder-7 (GAD-7)
- Patient Health Questionnaire-8 (PHQ-8).

Higher ISI, GAD-7, PHQ-8, and EAT-10 scores correspond to worse symptoms.

Results

270 HNC survivors were evaluated (51.1% oropharynx, 27.4% oral cavity and 21.5% laryngopharynx sites). 21.9% had symptoms of subthreshold insomnia, and 9.3% had symptoms of clinical insomnia. Compared to those without insomnia, survivors with clinical insomnia had worse UWQOL Physical (-18.33; p<0.001) and UWQOL Social scores (-29.38; p<0.001), and higher GAD-7 (+7.59; p<0.001), PHQ-8 (+9.08; p<0.001) and EAT-10 scores (+10.69; p<0.001).

Patients who underwent surgery alone had lower EAT-10 scores (-6.45; p<0.001) and higher UWQOL Physical scores (+18.89; p<0.001) compared to those who had radiation or chemoradiation alone. Patients without PEG dependence (FOIS 4-7) had higher UWQOL Physical (+20.81; p<0.001) and UWQOL Social scores (+9.99; p<0.001), and lower GAD-7 (-1.55; p=0.023) and PHQ-8 (-3.42; p<0.001) scores compared to PEG-dependent patients. This study demonstrates a symptom cluster of insomnia, dysphagia, anxiety, and depression in the HNC survivorship population.

		UWQOL-PHYSICAL		UWQOL-SOCIAL		EAT-10				EAT-10		GAD-7		PHQ-8	
Variable		Coefficient (95% CI)	P-value	Coefficient (95% CI)	P-value	Coefficient (95% CI)	P-value	Variable		Coefficient (95% CI)	P-value	Coefficient (95% CI)	P-value	Coefficient (95% CI)	P-value
Site			<0.001		0.003			Insomnia (ISI Score)			<0.001		<0.001		<0.001
Larynx/Hypopharynx	(Baseline)			(Baseline)				None	(Baseline)			(Baseline)		(Baseline)	
Oral Cavity/Maxillary	-9.33 (-14.90, -3.75)			1.41 (-4.11, 6.94)				Subthreshold	-9.14 (-13.33, -4.94)			6.65 (4.10, 9.20)		2.65 (1.55, 3.74)	
Oropharynx	-0.51 (-4.93, 3.90)			7.11 (2.39, 11.83)				Clinical	-18.33 (-24.31, -12.35)			10.69 (6.98, 14.39)		7.59 (6.02, 9.16)	
Treatment		<0.001					<0.001	FOIS		<0.001		<0.001		0.023	<0.001
RT/CRT	(Baseline)					(Baseline)		1-3	(Baseline)			(Baseline)		(Baseline)	
Surgery Alone	18.89 (13.19, 24.60)					-6.45 (-9.53, -3.37)		4-7	20.81 (15.25, 26.37)			9.99 (4.15, 15.82)		-12.87 (-16.09, -9.64)	
Surgery+RT/CRT	3.16 (-0.95, 7.28)					-1.34 (-3.62, 0.95)								-1.55 (-2.88, -0.21)	

Conclusion

Increasing severity of insomnia in HNC survivorship patients is associated with worse levels of dysphagia, anxiety, and depression. Patients with xerostomia tend to have higher levels of insomnia along with comorbid symptoms of depression and anxiety. The interplay between anxiety, mood disorders, and insomnia is yet to be fully established.

Using a longitudinal survivorship clinic, early recognition of mood disorders and insomnia may enable treatment in a timely manner. HNC providers should consistently address each facet of the symptom cluster (insomnia, dysphagia, anxiety, and depression) with a plan for early diagnosis and intervention.