#12120

Impact of Prophylactic Laser Therapy on Mucositis in Patients with Head and Neck Cancer (HNC) Undergoing Radiotherapy in Brazil

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BACKGROUND

- Mucositis, a common side effect of (chemo)radiotherapy in head and neck cancer (HNC) patients, affects 62-98% of individuals undergoing treatment
- Older age and poor nutritional status are known risk factors for mucositis development
- This is a single-arm, observational study to test the primary hypothesis that

Prophylactic laser therapy (photobiomodulation) would reduce the incidence of mucositis among patients with HNC treated in eight cancer centers among the Oncoclinicas Network in Southeast Brazil

METHODS

Study Population

Patients with HNC scheduled of (chemo)radiotherapy

Intervention

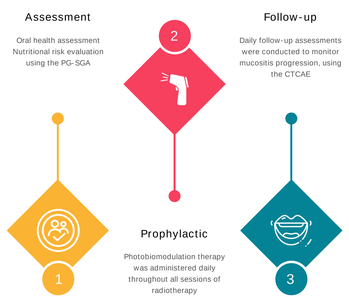

Figure 1. Intervention

Note. PG-SGA, Patient-Generated Subjective Global Assessment; CTCAE, Common Terminology Criteria for Adverse Events

METHODS

Outcome Measures

Primary endpoint: any grade of mucositis assessed using CTCAE

Power analysis: determination of sample size to detect reduction in grade 3+ mucositis incidence

Secondary Endpoint

Incidence of mucositis according to demographic and clinical factors (age, sex, stage, primary tumor site, HPV status, concurrent chemotherapy use, treatment setting, nutritional risk)

Assessment of nutritional risk and its association with mucositis incidence

Statistical Analysis

Descriptive analysis, comparison of proportions, and regression were performed

RESULTS

Table 1. Patient's characteristics (N=137)

Characteristics	N (%) / M (SD)
Age [M(SD)]	62 (12.9)
Sex [N (%)]	
Male	79 (66.9)
Female	39 (33.1)
Marital Status [N (%)]	
Single	33 (28.0)
Married	66 (55.9)
Divorced	10 (8.5)
Widowed	9 (7.6)
Tumor Site [N (%)]	
Oral cavity	39 (33.1)
Oropharynx	36 (30.5)
Laryngeal	17 (14.4)
Nasopharyngeal	15 (12.7)
Hypopharyngeal	2 (1.7)
Disease Stage [N (%)]	
I-II	34 (28.8)
III	31 (26.3)
IVA/B	48 (40.7)
Treatment [N (%)]	
Adjuvant	38 (52.1)
With concurrent chemotherapy	40 (54.8)
Radiation dose 60-70 Gy	124 (90.5)

RESULTS

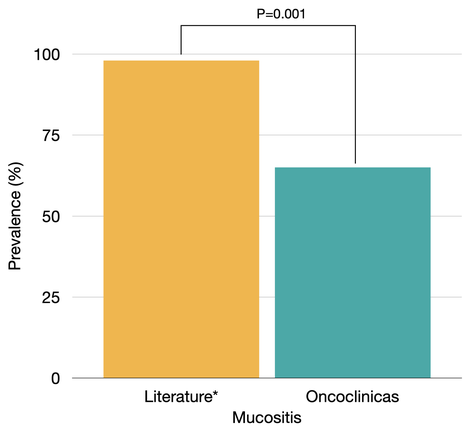

Figure 2. Comparison of mucositis prevalence: study findings vs. literature reported rates

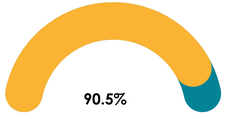

Figure 3. Adherence to the prophylactic photobiomodulation

- The prevalence of grade 3+ mucositis was 27.7% (95% CI 29.8-52.3%)
- Mucositis improved in 23 days (SD=15.4)
- Age, sex, and disease stage were not found to be associated with the incidence of mucositis
- Significant associations were observed between mucositis incidence and HPV Status (P=0.01), tumor site (P=0.01), concurrent chemotherapy use (P=0.03), and nutritional risk (P=0.04)

CONCLUSION

Efficacy of Prophylactic Laser Therapy

Our findings suggest that prophylactic laser therapy administered daily throughout radiotherapy sessions may be effective in reducing the incidence of mucositis in head and neck cancer patients

Lower Mucositis Prevalence

The prevalence of any grade of mucositis observed in our study was lower than that reported in the literature, indicating a potential benefit of prophylactic laser therapy in this patient population

Potential Impact on Patient Outcomes

The reduction in mucositis incidence observed with prophylactic laser therapy may have significant implications for patient well-being, treatment adherence, and overall treatment outcomes

Clinical Implications

Our findings underscore the importance of considering prophylactic interventions, such as laser therapy, in the management of mucositis in head and neck cancer patients undergoing radiotherapy, with potential implications for improving patient outcomes and quality of life

Limitations

- Limited generalizability
- Small sample size
- Single-arm design
- Lack of control arm

The data support further evaluation of this strategy in randomized clinical trial.

REFERENCES

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Scan here to view a plain language summary of this trial.