2019/2020 MASCC/ISOO Clinical Practice Guidelines for the Management of Mucositis

Short Summary #3

Developed by the Mucositis Study Group

Detailed publication

Photobiomodulation for the management of oral mucositis in cancer patients

Citation

Zadik Y, Arany PR, Fregnani ER, Bossi P, Antunes HS, Bensadoun RJ, Gueiros LA, Majorana A, Nair RG, Ranna V, Tissing WJE, Vaddi A, Lubart R, Migliorati CA, Lalla RV, Cheng KKF, Elad S. Systematic review of photobiomodulation for the management of oral mucositis in cancer patients and clinical practice guidelines. Support Care Cancer 27, 3969–3983 (2019).

Prevention of oral mucositis in hematopoietic stem cell transplantation

- **Guideline category: Recommendation (LoE I)**
- **Guideline statement: The panel recommends the use of intra-oral PBM therapy using low-level laser therapy for the prevention of OM in adult patients receiving HSCT conditioned with high-dose CT, with or without total body irradiation using one of the selected protocols; following the specific PTPs of the selected protocol is recommended for optimal therapy.**

Cancer treatment modality	Wavelength (nm)	Power density (irradiance; mW/cm^2)	Time per spot (sec)	Energy density (fluence; J/cm^2)	Spot size (cm^2)	Number of sites	Duration
HSCT	632.8	31.25	40	1.0	0.8	18	From day after cessation of conditioning for 5 days
	650	1000 *	2	2.0	0.04	54-70	From 1st day of conditioning till day + 2 post-HSCT(for 7-13 days)

Prevention of oral mucositis in head and neck cancer patients treated with radiotherapy

- **Guideline category: Recommendation (LoE II)**
- **Guideline statement: The panel recommends the use of intra-oral PBM therapy using low-level laser therapy for prevention of OM in adult patients receiving RT to the H&N (without CT); the specific PTPs of the selected protocol should be followed for optimal therapy. Safety considerations unique to patients with oral cancer should be considered.**

Cancer treatment modality	Wavelength (nm)	Power density (irradiance; mW/cm^2)	Time per spot (sec)	Energy density (fluence; J/cm^2)	Spot size (cm^2)	Number of sites	Duration
RT	632.8	24	125	3.0	1	12	Entire RT course

Prevention of oral mucositis in head and neck cancer patients treated with radiotherapy and chemotherapy

- **Guideline category: Recommendation (LoE I)**
- **Guideline: The panel recommends the use of intra-oral PBM therapy using low-level laser therapy for the prevention of OM in adult patients receiving RT and CT for H&N cancer; the specific PTPs of the selected protocol should be followed for optimal therapy. Safety considerations unique to patients with oral cancer should be considered.**

Cancer treatment modality	Wavelength (nm)	Power density (irradiance; mW/cm^2)	Time per spot (sec)	Energy density (fluence; J/cm^2)	Spot size (cm^2)	Number of sites	Duration
RT-CT	660	417 *	10	4.2	0.24	72	Entire RT course
	660	625 *	10	6.2	0.04	69	Entire RT course

Prevention of oral mucositis in cancer patients treated with chemotherapy

- Guideline: No guideline possible

Safety Analysis

In all analyzed RCTs, no short- or long-term adverse events with PBM treatments were reported, despite significant variations in the PTPs. However, in one cohort study, 15% of patients experienced an immediate (non-painful) burning sensation after intra-oral 635-nm diode laser treatment.

Abbreviations

CT — Chemotherapy
H&N — Head & neck
HSCT — Hematopoietic stem cell transplantation
LoE — Level of evidence
OM – Oral mucositis
PBM – Photobiomodulation
PTPs - PBM therapy parameters
RT — Radiotherapy
RT-CT — Radiochemotherapy