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Photobiomodulation (PBM) / Low Level laser Therapy (LLLT) Research

PBM Therapy Research And Cancer

Long-term Survival of a Randomized Phase III Trial of Head and Neck Cancer Patients Receiving Concurrent Chemoradiation Therapy With or Without Low-Level Laser Therapy (LLLT) to Prevent Oral Mucositis

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Abstract
Background: The impact of low-level laser therapy (LLLT) to prevent oral mucositis in patients treated with exclusive chemoradiation therapy remains unknown. This study evaluated the overall, disease-free and progression-free survival of these patients.

Methods:
Overall, disease-free and progression-free survival of 94 patients diagnosed with oropharynx, nasopharynx, and hypopharynx cancer, who participated on a phase III study, was evaluated from 2007 to 2015. The patients were subjected to conventional radiotherapy plus cisplatin every 3weeks. LLLT was applied with an InGaAlP diode (660nm-100mW-1J-4J/cm2).

Results:
With a median follow-up of 41.3months (range 0.7-101.9), patients receiving LLLT had a statistically significant better complete response to treatment than those in the placebo group (LG=89.1%; PG=67.4%; p=0.013). Patients subjected to LLLT also displayed increase in progression-free survival than those in the placebo group (61.7% vs. 40.4%; p=0.030; HR:1:93; CI 95%: 1.07-3.5) and had a tendency for better overall survival (57.4% vs. 40.4%; p=0.90; HR:1.64; CI 95%: 0.92-2.91).

Conclusion:
This is the first study to suggest that LLLT may improve survival of head and neck cancer patients treated with chemoradiotherapy. Further studies, with a larger sample, are necessary to confirm our findings.

Keywords: Chemotherapy; Disease-free survival; Head and neck cancer; Low-level laser therapy; Oral mucositis; Overall survival; Progression-free survival; Radiotherapy.

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