

Abstract P5-15-05: Evaluation of the effect of low level laser therapy on oral mucositis in breast cancer patients: A retrospective analysis FREE

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The goal of this retrospective study was to investigate the effectiveness of low level laser therapy (LLLT) in managing chemotherapy-induced oral mucositis (OM) in breast cancer patients.

Methods

Breast cancer patients treated with chemotherapy at the Jessa Hospital (Hasselt, Belgium) and having received LLLT for OM were retrospectively selected from our database, provided sufficient data with regard to OM was available.

LLLT treatment was provided using an AsGA diode laser ($\lambda = 665\text{ nm}$; output power: 100mW) combined with an infrared laser (continuous emission, output power: 500mW), delivered by an optical fiber with a diameter of 600 μm . The energy delivered was 4 J per point of application. Treatment was applied to a maximum of seven sites (tongue, palate, tonsil, left and right inside of the cheek, floor of the mouth, and lips), depending on the location of OM. Patients received treatment two times a week until healing of each lesion.

grade was taken into account). An OM score was calculated for each patient by summing the WHO grades of all treated areas. Finally, where available, pain scores (obtained through a visual analogue scale ranging from 0, no pain, to 10, worst possible pain) were taken into account.

Results

Data from 93 patients with stage 0-IV breast cancer were included in these analyses. Mean age was 55.37 years (standard deviation [SD] = 9.72, median = 56). Most of the patients received anthracycline-based chemotherapy (65%). At the start of LLLT, mean time since start of chemotherapy was 48.92 days (SD = 39.43, median = 39). The median duration of LLLT was 2 weeks.

OM outcomes at the start and the end of LLLT are presented in Table 1. At the end of LLLT, the number of areas that had to be treated significantly decreased. More importantly, there was a significant improvement in the severity of OM (highest WHO grade and OM score) and in pain. This improvement was also observed when patients were categorized according to their status at the end of LLLT (for each OM outcome: worsened, unchanged, or improved).

Table 1. Patients' status at the start and the end of Low Level Laser Therapy (LLLT)

Outcome	Start LLLT	End LLLT	N improved
Mean number of treated areas	3.89	2.16*	66 (71%)
Mean OM score	6.60	2.78*	75 (80.6%)
Mean pain score ^a	5.14	1.64*	20 (90.9%)
N (%) WHO grade 1	11 (11.8%)	60 (64.5%)*	60 (64.5%)

^a Pain scores were available for 22 (of the 93) patients. * $p < 0.0001$ (t-test or chi-square, as appropriate).

Conclusion

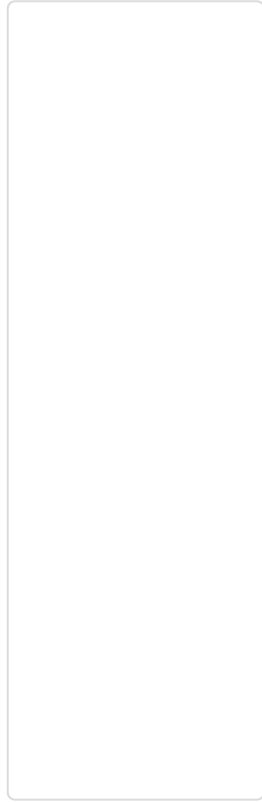
This retrospective analysis showed that LLLT, a standard management strategy for OM in head and neck cancer, significantly reduced the severity of chemotherapy-induced oral mucositis and relieved pain in patients with breast cancer. This is the first study in this population. Further research, preferably high-quality randomized controlled trials, is warranted to better investigate its usefulness in this population.

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