

Shining the soothing light

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Almost all patients suffering from head and neck squamous cell carcinoma (HNSCC) develop canker sores, a complication resulting from different modalities of treatment, namely stem cell transplantation, chemotherapy, and radiotherapy. Canker sore is divided in five grades (zero to four) by the World Health Organization (WHO), with severe cases (grades 3 and 4) being associated with pain, weight loss, poor quality of life, and higher hospital costs due to increased healthcare needs. Severe canker sore can also lead to treatment interruption, which may decrease the patient's chances of surviving the cancer.

No effective preventative strategy is currently available for canker sore, but prospective trials of [low-level laser therapy](#) (LLLT) done in HNSCC patients undergoing chemoradiotherapy showed promising results. However, additional trials detected a high incidence of canker sore among patients, leaving the question of whether LLLT can effectively prevent canker sore still open.

Now, a group of scientists led by Dr. Heliton Spindola Antunes at the National Cancer Institute (INCA) in Rio de Janeiro, Brazil, has successfully performed a definitive trial showing that LLLT reduces the occurrence of canker sore in HNSCC patients undergoing concurrent chemoradiotherapy and improves patient's quality of life.

The trial was performed with 94 HNSCC patients undergoing chemoradiotherapy. They were divided into two groups of 47 individuals, one of which received LLLT while the other received placebo. Researchers observed a significant difference in the incidence

of canker sore grades 3 and 4 between groups. For instance, while in the group of patients receiving LLLT only three patients developed severe cases of canker sore, in the group receiving the placebo this number was 19. There were also significant differences in the absence of canker sore (grades 0-1), with the LLLT group having 59.6% of patients free of canker sore as opposed to 21.3% in the placebo group. The LLLT group had less severe oral pain and, as a result, used fewer opioid analgesics. They were also less likely to require gastrostomy (a surgical opening into the stomach for nutritional support) throughout the cancer treatment.

"For ethical reasons," says Dr Antunes, "all patients who developed canker sore grades 3 or 4 in the placebo arm were then offered the option of receiving LLLT. They all improved to grade 2 or lower, supporting the evidence that LLLT is an effective choice to prevent or treat canker sore in these [patients](#)."

More information: The article entitled "Phase III trial of low-level laser therapy to prevent oral mucositis in head and neck patients treated with concurrent chemoradiation" has been published ahead of print in *Radiotherapy & Oncology* and is available at [dx.doi.org/10.1016/j.radonc.2013.08.010](https://doi.org/10.1016/j.radonc.2013.08.010)

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