

Low-level laser therapy for preventing or treating oral mucositis caused by radiotherapy or chemotherapy

Interventional procedures guidance

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Your responsibility

This guidance represents the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take this guidance fully into account. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

1 Recommendations

- 1.1 Current evidence on the safety of low-level laser therapy for oral mucositis shows no major safety concerns. Evidence on efficacy is adequate in quality and quantity. Therefore, this procedure can be used provided that standard arrangements are in place for clinical governance, consent and audit. Find out [what standard arrangements mean on the NICE interventional procedures guidance page](#).

2 The condition, current treatments and procedure

The condition

- 2.1 Oral mucositis (OM) is a common side effect of chemotherapy or radiotherapy used for treating head and neck cancer or before bone marrow transplantation. Symptoms usually start 5 to 10 days after chemotherapy or 14 days after radiotherapy and include dryness, halitosis, pain, inflammation and oral mucosa ulceration. Chemotherapy-associated OM can resolve within a few days after completion of chemotherapy, but radiotherapy-associated OM can last for weeks. OM can affect nutritional status (which may need enteral or parental nutrition) and quality of life, and can increase hospital stay. It can also require interruptions or dose reductions in chemotherapy or radiotherapy treatment.

Current treatments

- 2.2 Comprehensive oral hygiene, good hydration, a bland soft diet and avoiding alcohol and tobacco may increase the person's comfort. Ice, water-based moisturisers, painkillers and non-steroidal anti-inflammatory drugs can help reduce symptoms. Drugs such as palifermin are sometimes used to prevent or treat OM. Antibiotics may be needed to treat infectious complications.

The procedure

- 2.3 Low-level laser therapy aims to treat or prevent OM by promoting healing, reducing inflammation and increasing cell metabolism. A hand-held probe is used to deliver light in the red or near-infrared spectrum to the oral mucosa. It

can be delivered intra-orally or extra-orally, or as a combination of both approaches. During intra-oral treatment the probe, which is about the size of a dental curing light, is introduced into the mouth. For extra-oral treatment the probe is positioned close to the cheek. The procedure typically takes 20 to 30 minutes, and is delivered 2 to 5 times a week for the duration of the oncology treatment. The procedure may be started before treatment with chemotherapy or radiotherapy begins, with the intention of preventing OM.

3 Committee considerations

The evidence

- 3.1 To inform the committee, NICE did a rapid review of the published literature on the efficacy and safety of this procedure. This comprised a comprehensive literature search and detailed review of the evidence from 11 sources, which was discussed by the committee. The evidence included 3 systematic reviews and meta-analysis and 7 randomised controlled trials (1 of which also reported outcomes from a prospective case series) and 1 non-randomised comparative study. These are presented in [table 2 of the interventional procedures overview](#). Other relevant literature is in the appendix of the overview.
- 3.2 The specialist advisers and the committee considered the key efficacy outcomes to be: improved quality of life, reduction in oral mucositis, reduction in pain and the need for analgesia, reduction in dysphagia and the need for feeding tubes, improved nutrition, and reduction in chemotherapy treatment breaks.
- 3.3 Four commentaries from patients who had experience of this procedure were received, which were discussed by the committee.

Committee comments

- 3.4 The procedure can be used in children, but most of the evidence reviewed by the committee was from adults.
- 3.5 Most of the evidence reviewed by the committee was for treatment delivered intra-orally, and related to prophylactic use of this procedure.
- 3.6 The greatest benefit from the procedure appears to be in patients having

radiotherapy for head and neck cancers, or having chemotherapy for haematological malignancies.

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Endorsing organisation

This guidance has been endorsed by [Healthcare Improvement Scotland](#).

Accreditation

