

LASER OR RADIOFREQUENCY ABLATION IN THE TREATMENT OF RECURRENT THYROID CANCER

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Introduction: Thyroid cancer develops in the tissues of the thyroid gland. The standard treatment is surgery, although in patients with high surgical risks (deteriorated patients or patients who have undergone several procedures) or who do not want to have surgery, other alternatives should be sought. Minimally invasive procedures such as laser ablation (ILTT: Interstitial Laser Tumour Therapy) or radiofrequency ablation (RF) may be one of the alternatives.

Aims: To evaluate by means of a systematic review the treatment of recurrent thyroid cancer by laser or radiofrequency ablation, with regard to its effectiveness and safety in comparison to surgery as standard therapy.

Methods: A review of the scientific literature was carried out until May 2018 in the following databases specialising in evaluation reports and reviews (HTA (CRD database), INAHTA and Cochrane), in general databases (Medline (PubMed), Embase (Ovid SP) or ISI), and a search was carried out in databases of ongoing research projects (Clinicaltrials.gov). Two independent reviewers read and selected articles according to pre-established selection criteria. This information was summarised in the evidence tables.

Results: The bibliographic search yielded 328 articles, of which 20 were read in full and 6 were selected for inclusion. Subsequently, three more studies that did not appear in the search were included. For treatment by RF ablation, two systematic reviews with meta-analysis were selected, each including seven studies (the same in both reviews), three post-review case series studies, and one post-review clinical practice guide. In the case of ILTT, only 3 case series were included.

With regard to safety, the results obtained for patients treated with LITT show a low rate of major complications (0 %) and a high rate of minor complications and side effects (62 %), although they remit in a short time. In terms of effectiveness, the serum concentration of Tg was significantly reduced, as well as the diameter and volume of the nodule between the basal values and those found at the end of the follow-up, whether at 12 months or 24 months. There was a very variable recurrence rate between the studies.

In the case of RF ablation treatment, no life-threatening complications were reported, although major complications were, with a rate of 6.6%, the most frequent of which was transient dysphonia (3.2%). In terms of minor complications, RF ablation has a rate of 4.1%, the most frequent being pain. In the effectiveness study, both volume and diameter reduction, as well as Tg concentration reduction is significantly in favour of RF ablation when analysing baseline vs. post-treatment values ($p = 0.04$, $p = 0.001$ y $p = 0.05$ respectively).

Conclusions: This paper provides a summary of the current literature on the safety and effectiveness of laser or radiofrequency ablation in patients with recurrent thyroid cancer. These procedures do not overlap with conventional methods such as surgery and radioactive iodine therapy, as patients destined for these procedures are at high surgical risk or refuse surgery. Both treatments are well tolerated by patients, with few major complications and with minor complications that resolve over time; in addition, they have been shown to be effective in reducing tumour volume, as well as in reducing the serum thyroid hormone concentration.

Nevertheless, multicentre studies are necessary in order to define the selection of patients and to clarify the advantages and limitations of both procedures, especially laser ablation, for which the sample size is very small.

