

<b>Title</b>	<b>High-dose-rate brachytherapy for head and neck tumours</b>
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<b>Reference</b>	CT2012/03, <a href="http://www.sergas.es/Docs/Avalia-t/CT2012-03Braquiterapia.pdf">http://www.sergas.es/Docs/Avalia-t/CT2012-03Braquiterapia.pdf</a>

### Aim

To carry out a systematic review to assess the benefits of high dose-rate brachytherapy (HDR-BT) for the treatment of head and neck cancer tumours in terms of loco-regional control, distant metastasis, survival, safety, and costs with respect to conventional treatments (external radiotherapy, surgical excision, chemotherapy and low rate brachytherapy); and new treatment modalities (intensity modulated radiation therapy, stereotactic radiotherapy, etc.).

### Conclusions and results

A total of 24 studies were included (33 publications). Aside from one randomized clinical trial on tongue cancer, all studies were case series or retrospective cohort comparisons. In relation to tongue cancer, results of the randomised clinical trial (n=51), showed that local control at 7 years was slightly higher with HDR than LDR, however this difference was not significant (87% vs. 77%). In a retrospective cohort study, local control of tongue tumors was significantly greater with surgical resection (94%) than with LDR (83%) or HDR (65%), and the mandibular osteonecrosis rate was significantly higher in the HDR-BT group (20% vs. 8.4%).

In nasopharyngeal studies, overall disease-free survival at 5 years was found to be higher in the group treated with HDR-BT boost in comparison to those treated by external beam radiation therapy (EBRT) plans alone (71%-92% vs. 60%-90%). One assessment that compared three-dimensional conformal radiation therapy (3D CRT) boost to HDR boost, found that overall and cause-specific 5-year survival rates were slightly higher in the 3D-CRT group (64% and 70% vs. 56% and 60%). In another study, local control at 3 years was also observed to be greater during the period in which fractionated stereotactic radiosurgery replaced HDR-BT as a boost to EBRT (86% vs. 71%).

Severe complication rates were noted to be very high in one study: auditory loss/deafness (84%), osteonecrosis/osteolysis of the jaw (82%), cranial neuropathies (47%) and fibrosis of the neck (13%). Little evidence exists regarding other indications and overall, studies were highly biased.

The lack of comparability in terms of patient characteristics, study period, treatment protocol and follow-up time do not allow for inferring definitive conclusions or specific recommendations.

### Recommendations

The results of the studies reviewed leave important doubts as to the benefits of HDR-BT in head and neck in comparison to other alternatives available and thus reimbursement is not recommended until further evidence is available.

### Methods

In April 2012, we conducted a systematic search, with no time limit, of multiple biomedical databases was conducted (Medline, Embase, ISI Web of Knowledge, Centre for Reviews and Recommendations, Cochrane, etc.). Databases of ongoing studies (ClinicalTrials.gov, Current Controlled Trials, etc) and clinical practice guidelines (National Guideline Clearinghouse, Scottish Collegiate Guideline Network, etc.) were also reviewed. Papers were selected on the basis of pre-established inclusion criteria, excluding among others: congress abstracts; studies that jointly assessed different brachytherapy techniques; and those which had less than 1 year follow up or included less than 50 patients. The data were collected and summarised in evidence tables, and quality assessed using the SIGN scale.

### Further research/reviews required

An evidence-based, clinical practice guideline should be drawn up to address the various alternatives for treatment of cancer of the head and neck, including different schemes, approaches and radiation dosage.

### Written by

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