

- Title** **BIPOLAR RADIOFREQUENCY INDUCED THERMOTHERAPY (RFITT) FOR MANAGEMENT OF SNORING, HYPERPLASIA NASAL CONCHA, TONSILLAR HYPERTROPHY, TONSILLITIS AND OBSTRUCTIVE SLEEP APNEA**
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- Reference** Technology Review Report - 016/2015, online:  
[http://www.moh.gov.my/index.php/database\\_stores/store\\_view\\_page/30/275](http://www.moh.gov.my/index.php/database_stores/store_view_page/30/275)

### Aim

To assess the safety, efficacy / effectiveness and cost-effectiveness of bipolar radiofrequency induced thermotherapy (RFITT) for management of snoring, hyperplasia nasal concha, tonsils and mild obstructive sleep apnea.

### Conclusions and results

In conclusion, there was limited fair level of retrievable evidence to suggest that bipolar RFITT could improve the following conditions:

#### *i- Snoring and mild obstructive sleep apnea*

Visual Analog Scale (VAS) from one study showed that RFITT significantly reduced snoring levels, and globus;  $P = 0.0003$  and  $P = 0.03$  respectively. In addition to that, 41% were considered successfully treated by means of sufficient reduction in snoring levels objectified by the bed partner and subjective complaints hypersomnolence. However, the role of RFITT in sleep apnea and snoring was still inconclusive.

#### *ii- Hyperplasia nasal concha*

Two studies showed that after treatment with RFITT, nasal breathing and nasal flow was significantly improved. One of the study reported that, 18 patients (13.1%) from 98 patients who had used corticosteroid sprays before treatment completely stopped using the nasal spray; significant reduction of nasal spray used with  $p < 0.019$ .

#### *iii- Tonsillar hypertrophy*

One of the RCT compared bipolar RFITT procedure to standard blunt dissection tonsillectomy (control group) in chronic tonsillar hypertrophy. The result showed that tonsillar volume was significantly decreased over total study time. No volume measurements were possible in the control group.

#### *iv- Tonsillitis*

One of the RCT looked at RFITT procedure in recurrent tonsillitis patient. Results showed that after the procedure, the tonsil size in RFITT group decreased after two weeks, with peek of changes seen three months after the procedure. No measurement of tonsil size could be done in the control group (cold dissection tonsillectomy). Mean recovery time in RFITT group also showed significant

difference compared with control group;  $14.32 \pm 3.36$  minutes and  $17.08 \pm 2.91$  minutes ( $P < 0.005$ ) respectively. However, the efficiency of the method to control recurrent infection was comparable with the control group.

The trial included also showed that bipolar RFITT could reduce treatment time, reduce pain and prevent excessive bleeding during or after treatment. However, post-surgical adverse events such as upper respiratory tract infection and dysphagia should be taken into consideration. No cost-effectiveness study was retrieved. Additional to that, usage of RFITT for tongue base and palatal surgery requires proper training and credentialing.

### Recommendations (if any)

Bipolar RFITT may be used for hyperplasia nasal concha, tonsillitis and tonsillar hypertrophy. Meanwhile for snoring, and sleep apnea further research and personnel training is required

### Methods

Electronic databases were searched through Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) 1948 to present, and Embase 1996 to 2015 June 08. Searches were also run in PubMed, Horizon Scanning databases, UM Library website, FDA website and INAHTA for published reports. Search was limited to studies published within 1990s to 2000s. Google and Google Scholar were also used to search for additional web-based materials and information about the technology. Besides, additional articles from reviewing the references of retrieved articles also included.

### Further research/reviews required

Demand for RFITT in outpatient setting is high; however, evidence about its benefits particularly on certain conditions required further assessment.

### Written by

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