

- Title** Bronchial Thermoplasty
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- Reference** Technology Review Report – 003/2014, online:
http://www.moh.gov.my/index.php/database_stores/store_view_page/30/233

Aim

To assess the safety, efficacy, economic and organizational implication of BT as a complement to existing asthma medications for the treatment of severe persistent asthma in patients 18 years and older whose asthma is not well controlled with ICS and LABA.

Conclusions and results

A total of 303 titles were identified through the Ovid interface and PubMed. There were seven articles included in this review: one Horizon scanning report, one systematic review and meta-analysis, four RCTs, and a follow-up study of one RCT. The studies were multi centres involving many countries.

Safety

There was limited good level of evidence to suggest that BT in moderate or severe persistent asthma patients (18 years and older) whose asthma is not well controlled with ICS and LABA is safe. However, BT was associated with an increase in the frequency of adverse respiratory events and hospitalisations for adverse respiratory events during the period immediately after treatment. In the post treatment period (six to 52 weeks after the last BT procedure), there was no increase in adverse respiratory events and hospitalisations for adverse respiratory events. There was 84% risk reduction in emergency department visits for respiratory symptoms in the BT group than in the sham group. Adverse respiratory events and adverse respiratory events related hospitalisations remained unchanged in year two through year five compared with the first year after BT. More evidence is required on the safety of the procedure in the long term (> than five years).

Efficacy

There was limited good level of evidence to suggest that BT improved Asthma Quality-of-Life Questionnaire (AQLQ) scores, Asthma Control Questionnaire (ACQ) scores, symptom-free days, morning peak expiratory flow (PEF), fewer days lost from work / school or other activities due to asthma, and reduced exacerbations. The forced expiratory volume in 1 second (FEV₁) values remained stable between year one and year five after BT. More evidence is required on the effectiveness of the procedure in the long term (> than five years).

Cost /cost-effectiveness

There was no retrievable evidence on cost-effectiveness.

Organizational

NICE interventional procedure guidance on BT for severe asthma states that BT should only be used with special arrangements for clinical governance, consent and audit or research. Bronchial thermoplasty should be considered as a complex interventional bronchoscopy. Patient selection and treatment should be carried out by a respiratory team with special expertise in managing difficult and severe asthma.

Recommendations (if any)

Based on the above review, BT should only be utilised in selected patients by privileged pulmonologists in accredited centres. Registry of patients undergoing BT should be maintained.

Methods

Electronic databases were searched through the Ovid interface: Ovid MEDLINE® In-process and other Non-indexed citations and Ovid MEDLINE® 1948 to present, EBM Reviews - Cochrane Central Register of Controlled Trials - December 2013, EBM Reviews - Cochrane Database of Systematic Reviews - 2005 to December 2013, EBM Reviews - Health Technology Assessment - 4th Quarter 2013, EBM Reviews - NHS Economic Evaluation Database 4th Quarter 2013, Embase - 1988 to 2014 week 03. Searches were also run in PubMed. Google was used to search for additional web-based materials and information. No limits were applied. Additional articles were identified from reviewing the references of retrieved articles. Last search was conducted on 10 February 2014.

Further research/reviews required**Written by**

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