

Effectiveness of New Generation Heat and Moisture Exchangers and Adhesives for Laryngectomized Patients in Portugal



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Objectives

Total laryngectomy (TL) involves the removal of the entire larynx and redirection of the trachea to a neck stoma and is the last surgical treatment option for patients with laryngeal cancer (see figure 1)¹. Many patients who undergo TL face major pulmonary and other physical and psychosocial postoperative problems². The use of heat and moisture exchangers (HMEs) by TL patients reduces pulmonary problems³. This study was set up to evaluate the effectiveness of third generation HMEs (i.e., Provox® Life in comparison to current standard of care in Portugal (i.e., Provox XtraHME).

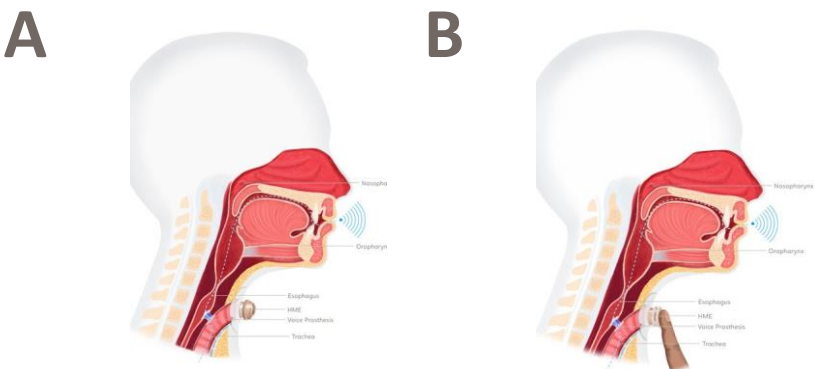


Figure 1: Anatomy after total laryngectomy. **A:** An HME provides pulmonary rehabilitation and is placed on the tracheostomy by means of an attachment. **B:** An HME can facilitate occlusion of the tracheostoma to redirect air through the voice prosthesis for tracheoesophageal speech.

Methods

A Markov model with 5 health states was developed to calculate the difference in health outcomes (i.e., pulmonary infections, mucus plug events, skin irritation and quality adjusted life year (QALYs)), over 10 years. This study used the Cough and Sputum Assessment Questionnaire (CASA-Q) to identify health states that distinguish in health-related Quality of Life. Input parameters were derived from the literature. QALYs were discounted.

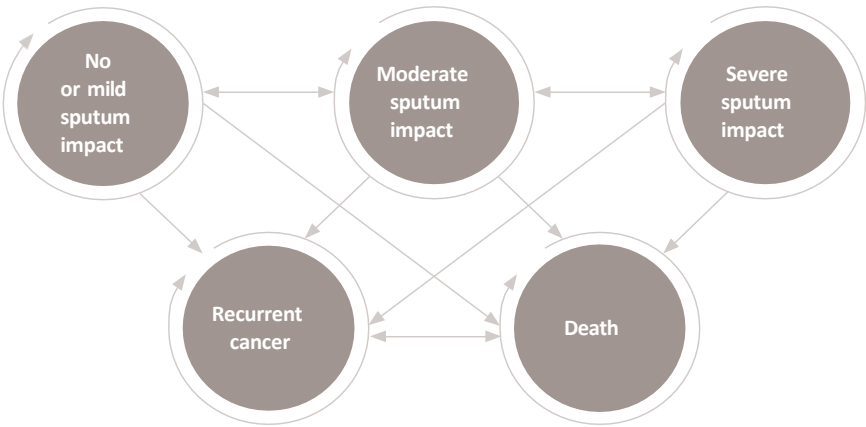
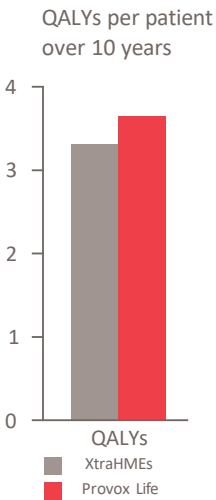


Figure 2: Health states that distinguish HRQoL for cost-effectiveness studies for laryngectomized patients

Results

The average amount of pulmonary infections per 100 patients in 10 years were 26.3 for patients using Provox® Life HMEs and 39.2 for patients using Provox XtraHMEs, the average amount of mucus plug events was 28.6 and 46.8 respectively, and the percentage of patients developing skin irritation due to adhesives was 1.8 and 2.8 respectively. The average discounted QALYs per TL patient over 10 years were 3.7 for patients using Provox® Life HMEs, and 3.3 for patients using Provox XtraHMEs.



Conclusions

These findings suggest that the introduction of a new generation HMEs among TL patients in Portugal can lower the number of pulmonary infections, mucus plug events and skin irritation and can improve QALYs.

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References:
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