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## The role of tonsillectomy in reducing recurrent pharyngitis: a systematic review

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### CRD summary

The review concluded that tonsillectomy resulted in a modest reduction in the episodes of recurrent pharyngitis in adults and children with moderate or severe disease. Multiple limitations make this conclusion unreliable.

### Authors' objectives

To evaluate the efficacy of tonsillectomy in reducing the incidence in recurrent pharyngitis.

### Searching

PubMed, SCOPUS, CINAHL and EMBASE were searched up to 2007. The search term 'tonsillectomy' was used. Studies published in English and foreign language publications with an English summary were eligible.

### Study selection

Randomised controlled trials (RCTs) which compared tonsillectomy with observation or medical therapy in patients with recurrent pharyngitis were eligible for inclusion. Patients in most of the included trials were children between 2 to 15 years. One trial included adults (>14 years). The definition and severity of recurrent pharyngitis varied between trials. Evaluated interventions were tonsillectomy, adenotonsillectomy or no surgery. Outcomes of interest included number of episodes or attack rates of pharyngitis. Study duration ranged from three months to three years.

Two reviewers independently reviewed the initially screened studies for relevance and discrepancies were resolved by discussion.

### Assessment of study quality

The authors did not state that they assessed validity.

### Data extraction

Odds ratios (OR) and their 95% confidence intervals (CI) were calculated for the incidence (attack rate) of pharyngitis.

The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.

### Methods of synthesis

The pooled OR and the 95% CI were calculated using both fixed-effect and random-effects models. Two meta-analyses were conducted: the first considered yearly outcomes of patients from the same trials as results of separate RCTs for pooling; the second used only the one year outcomes for pooling. Results of the fixed-effect model were reported. Publication bias was visually assessed by means of a funnel plot.

### Results of the review

Five RCTs (n=789) were included in the review: two RCTs compared tonsillectomy with control; two RCTs compared adenotonsillectomy with control; one RCT compared adenotonsillectomy or tonsillectomy with control.

Tonsillectomy and adenotonsillectomy were considered the same for purpose of interpretation of final results. Two RCTs reported outcomes at one, two and three years of randomisation from the initial study population. Tonsillectomy was associated with significant reduction in the incidence of pharyngitis (OR 0.502, 95% CI: 0.323, 0.782, numbers needed to treat 11, 95% CI: 7, 23). Results were reported to be similar on both fixed-effect and random-effects models. The funnel plot for the primary outcome did not suggest publication bias.

### Authors' conclusions

Tonsillectomy results in modest reduction in the episodes of recurrent pharyngitis in adults and children with moderate or severe disease.

### **CRD commentary**

This review addressed a well-defined question in terms of study designs, participants and interventions. The definition of outcomes was not clear. The authors searched several relevant sources for published studies. The use of only one search term and the inclusion of foreign language studies only if the abstract was available in English might have resulted in the omission of other relevant studies. It appeared the authors did not make a specific search for unpublished research, which introduced the possibility of publication bias, even though the funnel plot did not suggest it. It was not clear if the processes for data extraction and quality assessment were carried out with adequate attempts to minimise errors and bias. Some details of the primary studies were provided. Full details of quality assessments of individual trials were not provided. The first meta-analysis was not appropriate because patients from the same trials were double- or triple-counted, which made the results meaningless and potentially misleading. The use of odds ratios to pool the data on numerical outcomes (number of episodes or attack rates of pharyngitis) was not appropriate. The results of the tests for statistical heterogeneity were not reported. Multiple limitations in the review, as well as reporting process, make the authors' conclusion unreliable.

### **Implications of the review for practice and research**

Practice: The authors did not state any implications for practice.

Research: The authors stated the need for unbiased, objective, targeted, large-scale prospective evaluations of surgical outcomes in recurrent tonsillitis by health care organisations, governments and government supported research groups.

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