

Stopping perioperative antibiotics for post-tonsillectomy morbidity

NICE has developed the Cochrane Quality and Productivity topics to help the NHS identify practices that could be significantly reduced or stopped completely, releasing cash and/or resources without negatively affecting the quality of NHS care. Each topic has been derived from a Cochrane systematic review that has concluded that the evidence shows that the practice is harmful or ineffective and should not be used, or that there is insufficient evidence to support widespread use of the practice.

NICE summary of Cochrane review conclusions

The review suggests that antibiotics, although prescribed to reduce bacterial burden post tonsillectomy and hence reduce pain and bleeding, do not in fact reduce analgesic prescription, reported pain or bleeding. Perioperative antibiotic prescription may slightly reduce fever post tonsillectomy, although the clinical benefit of this is unclear. The risk of adverse effects, such as rashes and diarrhoea was greater in patients who received antibiotics. Considering the implications for development of antibiotic resistance with increased antibiotic use and the lack of clinical benefits demonstrated by this review, routine perioperative antibiotic prescription for tonsillectomy is not recommended.

The 'Implications for practice' section of the Cochrane review stated:

'Antibiotics should not be routinely administered to reduce postoperative morbidity in patients undergoing tonsillectomy'.

Details of Cochrane review

Cochrane review title

Antibiotics to reduce post-tonsillectomy morbidity (Review)

Citation

[DhiwakarM,ClementWA, SupriyaM,McKerrowW. Antibiotics to reduce post-tonsillectomymorbidity. Cochrane Database of Systematic Reviews 2012, Issue 12. Art. No.: CD005607. DOI: 10.1002/14651858.CD005607.pub4.](#)

When the review content was assessed as up to date

20 March 2012.

Quality and productivity category

Medicines optimisation, Right care.

Relevant codes	OPCS	ICD10	HRG
	F34 and F36	J3 and J35	CZ02 and CZ05

Cochrane Quality and Productivity topics

Programme budget:

Other – ear, nose and throat.

Evidence

Relevance to the NHS

Tonsillectomy is one of the most common surgical procedures performed in children and adults. Postoperative pain due to bacterial infection is a significant clinical problem despite improvements in surgical and anaesthetic techniques. Less frequent but more dangerous complications, such as bleeding following surgery can also occur. Antibiotics are commonly prescribed during the perioperative period (during the operation) to reduce the undesirable consequences of tonsillectomy.

The aims of the Cochrane systematic review were to establish whether perioperative antibiotics reduce pain, the use of analgesia and secondary haemorrhage following tonsillectomy. Some studies have found a reduction in morbid outcomes following the administration of perioperative antibiotics.

Search methods identified ten randomised controlled trials evaluating the impact of perioperative administration of systemic antibiotics on post-tonsillectomy morbidity in children or adults.

Pooled trial results from a total of 1035 participants met the eligibility criteria. Most trials did not find a significant reduction in pain with antibiotics. Antibiotics were not shown to be effective in reducing the need for analgesics. Antibiotics were not associated with a reduction in significant secondary haemorrhage rates (risk ratio (RR) 0.49, 95% CI 0.08 to 3.11, P = 0.45) or total secondary haemorrhage rates (RR 0.90, 95% CI 0.56 to 1.44, P = 0.66).

The systematic review proposes that antibiotics do not reduce pain, the need for painkillers or bleeding. The risk of adverse events, such as skin rash and diarrhoea, is slightly higher in patients who were prescribed antibiotics.

Therefore, in the absence of a clear and significant benefit, and because of the potential for harm, it is suggested that prescribing perioperative antibiotics routinely for patients undergoing tonsillectomy is avoided.

Relevant NICE guidance and products

No relevant NICE guidance was available at the time of publication (February, 2015).

Other accredited guidance

Scottish Intercollegiate Guidelines Network (April 2010). SIGN 117, [Management of sore throat and indications for tonsillectomy: A national clinical guideline](#).

Scottish Intercollegiate Guidelines Network (July 2008, updated April 2014). [SIGN 104. Antibiotic prophylaxis in surgery](#).

Royal College of Surgeons, ENT UK (Sept 2013) [Commissioning guide: Tonsillectomy](#).

National Institute for Health and Care Excellence (Expected July 2015) [Antimicrobial stewardship](#)

Cochrane Quality and Productivity topics

Potential productivity savings

Estimate of current NHS use

- In the UK recurrent sore throat has an incidence of 100 per 1000 population a year (Christos et al, 2009).
 - In 2012/13, approximately 54,000 tonsillectomy procedures were performed in the NHS in England. This information may include people who underwent unilateral tonsillectomy, tonsillar biopsy, tonsillectomy for known carcinoma, tonsillectomy in conjunction with palatal surgery and 'hot' tonsillectomy for peritonsillar abscess which are excluded in the Cochrane review paper. Therefore the actual number to be considered may be less than the 54,000 episodes (HSCIC, 2013).
 - There is no information showing how many of these people were prescribed antibiotics. However, a study from the UK (Dhiwakar and Brown, 2005) showed that only 12% of otolaryngologists routinely prescribe antibiotics. This translates to about 6,500 people prescribed antibiotics, that is, assuming the 12% correctly reflects current practice in England.
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Level of productivity savings anticipated

- Stopping the use of antibiotics will save money for the NHS. The cost of clarithromycin and erythromycin at an average dose of 1,125 mg per day is £0.72 per person (British national Formulary, January 2015). For a course of treatment lasting 14 days the cost per person is £10.08.
 - Based on the estimated 6,500 people prescribed antibiotics in England, the potential saving is estimated to be £65,500 per annum.
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Type of saving

- This is actual cash saving only if post-tonsillectomy antibiotic prescriptions are stopped.
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Any costs needed to achieve the savings

- No additional costs are required to achieve change.
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Other information

- The change will impact on CCGs prescription budgets.
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Potential impact on quality of NHS care

Impact on clinical quality

Not anticipated to have any impact on quality of care delivered to patients if antibiotics are not prescribed.

Impact on patient safety

Not anticipated to have any impact on patient safety if antibiotics are not prescribed.

Impact on patient and carer experience

Not anticipated to have any impact on patient and carer experience if antibiotics are not

Cochrane Quality and Productivity topics

prescribed.

Likely ease of implementation

Time taken to implement

It is assumed that stopping the prescribing of antibiotics can be achieved quickly (within 3 months).

Healthcare sectors affected

Affects one department or team.

Stakeholder support

Likely to achieve good buy-in from key influencers.

References

[British national Formulary](#) (Jan 2015) Macrolides (section 5.1.5).

Christos C. Georgalas, Neil S. et al (2009) Tonsillitis. *Clinical Evidence*; 10:503.

Dhiwakar M and Brown PM (2005) Are adjuvant therapies for tonsillectomy evidence based? *Journal of Laryngology and Otology*; 119 (8):614–9.

Evans AS, Khan AM, Young D, et al (2003) Assessment of secondary haemorrhage rates following adult tonsillectomy - a telephone survey and literature review. *Clinical Otolaryngology and Allied Sciences*;28(6):489–91.

Lowe D, van der Meulen J. (2004) National Prospective Tonsillectomy Audit. Tonsillectomy technique as a risk factor for postoperative haemorrhage. *Lancet*;364 (9435):697–702.

Salonen A, Kokki H, Nuutinen J (2002) Recovery after tonsillectomy in adults: a three-week follow-up study. *Laryngoscope*; 112 (1):94–8.

[The Health and Social Care Information Centre](#), Hospital Episode Statistics for England. Inpatient statistics, 2012-13. (Accessed January 2015)

Wei JL, Beatty CW, Gustafson RO (2000). Evaluation of posttonsillectomy hemorrhage and risk factors. *Otolaryngology - Head and Neck Surgery*; 123(3): 229–35.