Canadian Agency for Drugs and Technologies in Health

RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

TITLE: Optimal Pharmaceutical Pain Management Following Tonsillectomy or Adenoidectomy for Pediatric Patients: Clinical Evidence and Guidelines

DATE: 06 December 2012

RESEARCH QUESTIONS

1. What is the clinical evidence regarding optimal pharmaceutical pain management options for pediatric patients following tonsillectomy, adenoidectomy, or both?

2. What are the evidence-based guidelines regarding pain management for pediatric patients following tonsillectomy, adenoidectomy, or both?

KEY MESSAGE

Two systematic reviews, five randomized controlled trials, and two evidence-based guidelines were identified regarding optimal pharmaceutical pain management options for pediatric patients following tonsillectomy, adenoidectomy, or both.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2012, Issue 11), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. Methodological filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, randomized controlled trials and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2002 and November 22, 2012. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials and evidence-based guidelines.

Two systematic reviews, five randomized controlled trials, and two evidence-based guidelines were identified regarding optimal pharmaceutical pain management options for pediatric patients following tonsillectomy, adenoidectomy, or both. Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

A variety of pharmaceutical pain management options were examined in the included literature. None of the studies identified in this report[1-9] identified an optimal pain management option for pediatric patients following tonsillectomy, adenoidectomy, or adenotonsillectomy. The conclusions of the identified studies are summarized in Table 1.

Table 1: Summary of Included Studies

Author, Year	Type of Analgesic and Procedure	Conclusions
Systematic Reviews		
Fedorowicz et al.[1] (2011)	Oral mouthwashes, rinses, and sprays Tonsillectomy	Few of the studies included in the review provided good data for their specified outcomes. Lidocaine spray was more effective than saline for pain reduction up to the third day after surgery. The authors indicated that the studies had a high risk of and comprehensive conclusions could not be made.
Hamunen and Koniten[2] (2005)	Systemic paracetamol, NSAIDs, and opioids Tonsillectomy	Two of the 36 included studies examined analgesics given postoperatively for pain. The authors concluded that more research is required to determine optimal analgesic treatment for the management of post-tonsillectomy pain.
Randomized Controlled Trials		
Miura et al.[3] (2009)	Topical sucralfate Adenotonsillectomy	Children were randomized to receive topical sucralfate or placebo during and after surgery. There was a significant reduction in pain in the sucralfate group. The authors determined the intervention was beneficial but not potent enough to be used as the only source of analgesia.

Table 1: Summary of Included Studies		
Author, Year	**Type of Analgesic and Procedure**	**Conclusions**
Bean-Lijewski et al.[4] (2007)	Rofecoxib or hydrocodone with acetaminophen Tonsillectomy	Active pain scores were significantly reduced for patients taking rofecoxib versus the hydrocodone mixture after surgery. The authors also presented a review of analgesic strategies.
Chacra et al.[5] (2005)	Hydrogen peroxide mouth rinse Tonsillectomy	Patients were randomized to peroxide rinse or water rinse for 14 days. The authors determined there was no significant improvement in pain relief for patients using the peroxide rinse compared to the group using water.
Ozalevli et al.[6] (2005)	Morphine or tramadol Tonsillectomy	Patients received PCA with either tramadol or morphine. Pain scores were significantly reduced in both groups but were lower in the morphine group.
Akbas et al.[7] (2004)	Fusafungine spray Tonsillectomy	Patients were randomized to receive an antibiotic or fusafungine plus an analgesic or fusafungine alone. No significant differences in pain were observed until the 10th day after surgery. The fusafungine groups had lower pain scores and improved healing.

NSAID = non-steroidal anti-inflammatory drug; PCA = patient-controlled analgesia

Two evidence-based guidelines[8,9] regarding the post-tonsillectomy care of children were identified. The first guideline[8] suggests advocating for pain management after surgery and that caregivers should be educated regarding the importance of managing and reassessing pain levels once at home. The second guideline[9] recommends that parents and patients be informed that pain may increase up to the sixth postoperative day. It is also recommended that patients be provided with a week's worth of analgesic and safety and dosage information for the analgesic provided. No recommendations are made in either guideline regarding specific drugs for managing post-tonsillectomy pain.

REFERENCES SUMMARIZED

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

1. Fedorowicz Z, Al-Muharraqi MA, Nasser M, Al-Harthy N, Carter B. Oral rinses, mouthwashes and sprays for improving recovery following tonsillectomy. Cochrane Database Syst Rev. 2011;(7):CD007806.
   PubMed: PM21735418

2. Hamunen K, Kontinen V. Systematic review on analgesics given for pain following tonsillectomy in children. Pain. 2005 Sep;117(1-2):40-50.
   PubMed: PM16109456

Randomized Controlled Trials

3. Miura MS, Saleh C, de Andrade M, Assmann M, Ayres M, Lubianca Neto JF. Topical sucralfate in post-adenotonsillectomy analgesia in children: a double-blind randomized clinical trial. Otolaryngol Head Neck Surg. 2009 Sep;141(3):322-8.
   PubMed: PM19716007

4. Bean-Lijewski JD, Kruitbosch SH, Hutchinson L, Browne B. Post-tonsillectomy pain management in children: can we do better? Otolaryngol Head Neck Surg. 2007 Oct;137(4):545-51.
   PubMed: PM17903568

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   PubMed: PM16089221

6. Ozalevli M, Unlugenc H, Tuncer U, Gunes Y, Ozcengiz D. Comparison of morphine and tramadol by patient-controlled analgesia for postoperative analgesia after tonsillectomy in children. Paediatr Anaesth. 2005 Nov;15(11):979-84.
   PubMed: PM16238560

7. Akbas Y, Pata YS, Unal M, Gorur K, Micozkadioglu D. The effect of fusafungine on post-operative pain and wound healing after pediatric tonsillectomy. Int J Pediatr Otorhinolaryngol. 2004 Aug;68(8):1023-6.
   PubMed: PM15236888

Guidelines and Recommendations

8. Baugh RF, Archer SM, Mitchell RB, Rosenfeld RM, Amin R, Burns JJ, et al. Clinical practice guideline: tonsillectomy in children. Otolaryngol Head Neck Surg [Internet]. 2011 Jan [cited 2012 Dec 4];144(1 Suppl):S1-30. Available from: http://oto.sagepub.com/content/144/1_suppl/S1.long

PubMed: PM21493257
Summary available from: http://guidelines.gov/content.aspx?f=rss&id=25313

9. Scottish Intercollegiate Guidelines Network (SIGN). Management of sore throat and indications for tonsillectomy: a national clinical guideline [Internet]. Edinburgh: NHS Quality Improvement Scotland; 2010 Apr. Chapter 7.5.1, Postoperative pain pattern; p. 16. [cited 2012 Dec 3]. (SIGN 117). Available from: http://www.sign.ac.uk/pdf/sign117.pdf

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APPENDIX – FURTHER INFORMATION:

Non-Randomized Studies

10. Sertel S, Herrmann S, Greten HJ, Haxsen V, El-Bitar S, Simon CH, et al. Additional use of acupuncture to NSAID effectively reduces post-tonsillectomy pain. Eur Arch Otorhinolaryngol. 2009 Jun;266(6):919-25.
PubMed: PM18982338

11. Huth MM, Broome ME. A snapshot of children's postoperative tonsillectomy outcomes at home. J Spec Pediatr Nurs. 2007 Jul;12(3):186-95.
PubMed: PM17594298

12. Wilson ME, Helgadóttir HL. Patterns of pain and analgesic use in 3- to 7-year-old children after tonsillectomy. Pain Manag Nurs. 2006 Dec;7(4):159-66.
PubMed: PM17145490

Randomized Controlled Trials

Patient population unclear

13. Inci N, Basut O, Kasapoglu F, Coskun H. Management of pain after tonsillectomy: a prospective, randomized clinical study. Kulak Burun Bogaz Ihtis Derg. 2009 Jan;19(1):1-8.
PubMed: PM19793040

Non-pharmaceutical interventions

14. Sylvester DC, Rafferty A, Bew S, Knight LC. The use of ice-lollies for pain relief post-paediatric tonsillectomy. A single-blinded, randomised, controlled trial. Clin Otolaryngol. 2011 Dec;36(6):566-70.
PubMed: PM22070741

15. Vayisoglu Y, Gorur K, Ozcan C, Gucluturk T. Is speech therapy useful as a complementary treatment for post-tonsillectomy pain? Int J Pediatr Otorhinolaryngol. 2010 Jul;74(7):765-7.
PubMed: PM20398947

16. Ozlugedik S, Genc S, Unal A, Elhan AH, Tezer M, Titiz A. Can postoperative pains following tonsillectomy be relieved by honey? A prospective, randomized, placebo controlled preliminary study. Int J Pediatr Otorhinolaryngol. 2006 Nov;70(11):1929-34.
PubMed: PM16914210

Parental education and at-home pain management

17. Sutters KA, Savedra MC, Miaskowski C. The pediatric PRO-SELF(c): pain control program: an effective educational program for parents caring for children at home following tonsillectomy. J Spec Pediatr Nurs. 2011 Oct;16(4):280-94.
PubMed: PM21951354

18. Sutters KA, Miaskowski C, Holdridge-Zeuner D, Waite S, Paul SM, Savedra MC, et al. A randomized clinical trial of the efficacy of scheduled dosing of acetaminophen and hydrocodone for the management of postoperative pain in children after tonsillectomy. Clin J Pain [Internet]. 2010 Feb [cited 2012 Dec 3];26(2):95-103. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2920618
PubMed: PM20090434

19. Wiggins SA. Family exemplars during implementation of a home pain management intervention. Issues Compr Pediatr Nurs. 2009;32(4):160-79.
PubMed: PM19919172

20. Vallee E, Lafrenaye S, Tetrault JP, Mayer S, Dorion D. Pain management after tonsillectomy: morphine is not enough. J Otolaryngol Head Neck Surg. 2008 Apr;37(2):279-84.
PubMed: PM19128627

21. Unsworth V, Franck LS, Choonara I. Parental assessment and management of children's postoperative pain: a randomized clinical trial. J Child Health Care. 2007 Sep;11(3):186-94.
PubMed: PM17709354

22. Owczarzak V, Haddad J, Jr. Comparison of oral versus rectal administration of acetaminophen with codeine in postoperative pediatric adenotonsillectomy patients. Laryngoscope. 2006 Aug;116(8):1485-8.
PubMed: PM16885758

23. Sutters KA, Miaskowski C, Holdridge-Zeuner D, Waite S, Paul SM, Savedra MC, et al. A randomized clinical trial of the effectiveness of a scheduled oral analgesic dosing regimen for the management of postoperative pain in children following tonsillectomy. Pain. 2004 Jul;110(1-2):49-55.
PubMed: PM15275751

Review Articles

24. Isaacson G. Tonsillectomy care for the pediatrician. Pediatrics. 2012 Aug;130(2):324-34.
PubMed: PM22753552

Additional References

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26. Children's Hospital Boston. Tonsillectomy and adenoidectomy [Internet]. Boston: Children's Hospital Boston; 2009. 16 p. [cited 2012 Dec 3]. Available from: http://childrenshospital.org/clinicalservices/Site2149/Documents/TonsilsandAdenoids_121808.pdf