Reducing Re-Admission after Tonsillectomy

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Best Evidence ENT
2016

Objectives

• Review literature on readmission after tonsillectomy

• Discuss models and innovation to decrease readmission
Defining readmission

“An admission to an acute care hospital within 30 days of a discharge from the same or another acute care hospital.”

Center for Medicare and Medicaid publicly reports risk-standardized readmission rates for acute myocardial infarction, heart failure, and pneumonia.

Audience response

What is your readmission rate after T&A?

A. Less than 2.5%
B. Between 2.5% and 5%
C. Between 5% and 10%
D. More than 10%
E. I do not track readmission rates
Readmission after T&A

- Readmission after ENT procedures is lower than readmission for a general practice
- Pediatric ENT readmission rates tend to be lower than adult readmissions.
- The high volume of pediatric ENT procedures means that even a small percentage of readmissions can exact a large cost on the health care system.


<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Study Type</th>
<th>Total patients</th>
<th>Age (year)</th>
<th>Readmit %</th>
<th>Readmit ED %</th>
<th>Readmit Inpt %</th>
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</thead>
<tbody>
<tr>
<td>Bhattacharyya</td>
<td>2010-2011</td>
<td>Multistate database</td>
<td>70,520</td>
<td>&lt; 18</td>
<td>8.1</td>
<td></td>
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<tr>
<td>Curtis</td>
<td>2012</td>
<td>AMC</td>
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<td>&lt; 21</td>
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<tr>
<td>Dural</td>
<td>1980-2012</td>
<td>Intermountain Health Care</td>
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<td>18-45</td>
<td>6.3</td>
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<td>Graboyes</td>
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<td>1,058</td>
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<tr>
<td>Jain</td>
<td>2011</td>
<td>NSQIP: all ENT procedures</td>
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<td>0.08 tonsillectomy</td>
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<td>Mahant</td>
<td>2014</td>
<td>PHIS: all hospitals</td>
<td>130,715</td>
<td>18</td>
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<td>Murray</td>
<td>2009-2011</td>
<td>NSQIP: all ENT procedures</td>
<td>463,307</td>
<td>&lt; 18</td>
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<td>total 2.78 tonsillectomy</td>
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<td>Shay</td>
<td>2010</td>
<td>Multistate database</td>
<td>36,311</td>
<td>&lt; 18</td>
<td>7.6</td>
<td>6.36</td>
<td>1.33</td>
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</table>

Audience response

What is your top diagnosis for readmission to the ED or inpatient?

A. Bleeding
B. Poor pain control
C. Dehydration
D. Other
Diagnosis related to readmission

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<td>Curtis</td>
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<td>David</td>
<td>39,906</td>
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<td>0.8 - 1 visit</td>
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<td>1.2</td>
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<td>Edmonson</td>
<td>35,805</td>
<td>12.1</td>
<td>6.4</td>
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<td>Mahant</td>
<td>139,715</td>
<td>7.8</td>
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<td>0.8</td>
<td>2.2</td>
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<tr>
<td>Shay</td>
<td>36,211</td>
<td>7.6</td>
<td>1.1 revisit</td>
<td>2.0</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Audience response

Which factors play a role in readmission after T&A?

A. Gender
B. Insurance status
C. Socioeconomic status
D. Race
E. None
F. All of the above
Risk factors for return visits

- Intermountain West Study (39,906 patients, 6.3% readmit)
  - Medicaid insurance (OR = 1.64).
  - Hispanic race (OR = 1.36).
  - Increased severity of illness (OR = 11.29).
  - Increased time spent in PACU correlated with higher rate inpatient admission (p < 0.001).
  - A linear relationship between the child’s age and the risk of post-tonsillectomy hemorrhage.


Risk factors for return visits

- Murray et al (493,507 patients, 2.78% readmit)
  - Includes all pediatric ENT procedures.
  - Public insurance (OR = 1.33).
  - Blacks and Hispanics (OR = 0.9) when compared to White patients.
  - Chronic medical conditions predict a higher admission rate (OR 1.73).

Risk factors for return visits

- Bhattacharyya (79,520 patients, 8.1% readmit)
  - Increasing household income quartile associated with decreasing rate of revisits, hemorrhage, acute pain, and fever (OR 0.87).
  - Female sex associated with decreased rate of hemorrhage (OR = 0.81).
  - Black and Hispanic children with increased risk for a revisit and increased odds for acute pain at the revisit (OR = 1.1).
  - Race was not associated with the hemorrhage rate.


Audience response

Do you feel surgical technique impacts readmission rates?

A. Yes
B. No
C. Uncertain

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Surgical Technique

• Recent literature sparse regarding readmissions and surgical technique

• Walker
  – 1,133 cases comparing monopolar vs cold steel.
  – No statistical difference between technique, but by age group.


Surgical Technique

• Intermountain West Study
  – Data for 52,771/79,520 children; techniques included coblation, monopolar cautery, bipolar cautery or cold technique.
  – Coblation T&A most common identified surgical technique (22.0%).
  – Coblation alone compared to any other technique slightly less likely to have a return visit (OR = 0.89).


Cost

• Intermountain West Study
  – Any return visit $425 ($95–18,820).
  – Emergency department visit $304 ($95–2298).
  – Admission $1850 ($120–18,820).

Cost

- Curtis
  - ED visit $1420 ($1104-$1737).
  - Respiratory complications $2855 ($1434-$4277).
  - Hemorrhage $1502 ($1216-$1787).
  - Dehydration $1372 ($995-$1750).
  - Postoperative pain $781 ($282-$1200).

Cost of readmission

- Sun et al.
  - Added cost of $1828 for children with a post-tonsillectomy hemorrhage.
  - $30,081 for children requiring mechanical ventilation as compared to children without post-tonsillectomy complications.

MCW ENT numbers

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<td>Hakim</td>
<td>120,710</td>
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<td>May</td>
<td>36,211</td>
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<td>MCW ENT 2015</td>
<td>1,108</td>
<td>8.0</td>
<td>1.7</td>
<td>2.2</td>
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Audience response

So...what's out there to address readmission after tonsillectomy?

Do you have a formal process to address readmission?
A. Yes
B. No

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Surgical Care
- Postoperative swelling, e.g., Pro-Fusion®
- Postoperative pain, e.g., Oxycodone
- Bleeding
- Nausea
- Mortality

Primary care MD

Shared Decision Making
- Continuous improvement opportunities

Clinical Outcomes
Cleveland Clinic: Quality Care Plan

• Quality of Care during the Initial Admission
• Improved communication among patients, clinicians and caregivers
• Patient education
• Appropriate discharge care and planning
• Coordination of care after discharge

Quality of Care During Admission

• Team: Quality Improvement Officer, Chief Administrator, Nurse Manager.
• Bimonthly quality and patient experience rounds.
  - Patient understanding of continuity of care
  - Patient education
  - Pain control
  - Caregiver needs
  - General safety and quality issues

Improved Communication

• “Baseball card” of names, pictures, roles of all team members.
• White board installed in each room.
  - Names of physician, nurse, medical assistant
  - Patient daily goals
  - Pain medication schedule
  - Upcoming tests
• Multidisciplinary team and discharge rounds.
Patient Education

- Initiate education at first clinic visit.
  - Specific disease processes
  - Expected course
  - Recovery and discharge needs
- Educational videos available inpatient and through a web portal.

Appropriate Discharge Planning

- Discharge package to each patient.
  - Supplies
  - Instructions
  - Pamphlets
  - Appointment cards and phone numbers
- Medications reviewed.
- Team concerns discussed.

Coordination of Care after Discharge

- Post-operative appointment made pre-admission.
- Contact information provided.
- Telephone call within 72 hours of discharge.
Following the institution of this plan, the number of readmissions for that year was 3.5%, compared to 6.5% and 6.3% in 2010 and 2011, respectively.

Pre-intervention costs: Initial admission $100,803; Readmission $58,916.

Drawbacks:
- Time and resource intensive.
- Multiple interventions at one time.
- Did not result in a reduction of number of readmissions after post-operative visit.
- Did not change length of time to readmission.
Education

• Patient
  – Teaching materials.
  – Leverage technology with text applications and videos.

• Nursing
  – Understand procedure outcomes.
  – Relay best practices for care.
  – Periodic assessment of competencies.
Audience question

What interventions do you do to reduce admission after tonsillectomy?

External pressures

• With 530,000 procedures performed annually, tonsillectomy could be an ideal procedure to employ value-based approaches to healthcare reform.
• Understanding the causes and costs for postoperative complications and patient populations more at risk for complications is critical for effective implementation of bundled payment plans.
External pressures

• The practice of rewarding or penalizing hospitals based on readmission rates as a marker for health care quality has been controversial since its inception.
• Readmission rates are skewed by patients with the most complex diseases and by those from the lowest socioeconomic status (SES).
• Efforts to limit readmissions is thought to form an important quality measure in the movement away from fee-for-service medicine and toward value based care.


Unanswered questions…

• Is it possible that readmission rates may be fixed due to morbidity associated with T&A?
• Journey may be more tolerable with support and cues to manage post-operative care.

Summary

• Readmissions will occur
  – Monitor ED revisits and inpatient as both are a burden to the system.
• Reduction of readmission requires frequent evaluation for improvement.
• External pressures with cost and impact on reimbursement is inevitable.
The doctor-patient relationship is critical to the placebo effect.

Irving Kirsch

References


Thank you

Questions?