RESEARCH PAPER

Evaluation Of Post Tonsillectomy Quality Of Life In Cases Of Adult Recurrent Acute Tonsillitis

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Abstract
Tonsillectomy is widely performed surgery worldwide. The purpose of this prospective study is to evaluate the impact of Quality Of Life on adults post tonsillectomy and to compare different guidelines/sets of criteria required for tonsillectomy in cases of adults having recurrent acute tonsillitis in a tertiary hospital in Maharashtra, India.

Key Words: Tonsillectomy, Recurrent Tonsillitis, Quality of Life, Adult Patients, Postoperative Outcomes, Otorhinolaryngology, Patient-Reported Outcomes

How to cite this article: Sharma A, Havle AD, Shedge SA, Aditya MP, Agrawal G, Auti A. Evaluation Of Post Tonsillectomy Quality Of Life In Cases Of Adult Recurrent Acute Tonsillitis. Int J Drug Deliv Technol. 2026;16(15s): 168-175. DOI: 10.25258/ijddt.16.15s.149

Introduction

Recurrent acute tonsillitis (RAT) in adults is a multifactorial disease characterized by repeated episodes of acute inflammation of the palatine tonsils[1]. Unlike simple acute tonsillitis, recurrent forms involve complex interactions between host immunity, microbial colonization, anatomical susceptibilities, and inflammatory mediators. It represents a persistent and often debilitating condition characterized by repeated episodes of inflammation of the palatine tonsils.[2] Unlike its pediatric counterpart, adult tonsillitis tends to have a more protracted and complicated clinical course, frequently interfering with daily functioning, occupational responsibilities, and psychosocial well-being.[1] The chronicity and recalcitrant nature of recurrent episodes compel many patients to seek definitive treatment, with tonsillectomy emerging as a common surgical solution.[3] Despite the long-standing use of tonsillectomy in otolaryngological practice, the evaluation of its long-term benefits—particularly in terms of post-operative quality of life (QoL)—has gained prominence only in recent decades, with increasing emphasis on patient-centered outcomes and functional recovery rather than mere clinical endpoints.[4]

The notion of quality of life extends beyond the mere absence of disease; it encompasses physical, psychological, and social domains of health that are subjectively experienced by individuals.[5] In cases of adult recurrent tonsillitis, these domains are often compromised due to persistent throat pain, fever, dysphagia, general malaise, and the need for repeated antibiotic courses.[6]These not only lead to absenteeism from work and social engagements but also contribute to anxiety, fatigue, and diminished life satisfaction.[7]

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While historical decisions for tonsillectomy relied on clinical benchmarks like the Paradise or Centor guidelines—which prioritize the frequency and severity of infections—these criteria often overlook the cumulative impact of the condition on a patient's overall well-being.[8] Frequent medical consultations, use of sick leaves, diminished workplace efficiency, and healthcare expenses contribute to a significant economic burden at both individual and societal levels.[9] Tonsillectomy, by mitigating the recurrence of infections, serves as a cost-effective intervention in the long term.[10]

The **Tonsillectomy Outcome Inventory-14 (TOI-14)** is used pre- and post-operatively to detect changes in tonsillitis-related quality of life (TR-QoL). It consists of 14 questions covering four subscales: throat discomfort, general health, resources, and social-psychological restrictions. The questionnaire uses a six-point Likert scale with 0 representing "no problem" and 5 representing "couldn't be worse."[11]

Background

Recurrent acute tonsillitis (RAT) in adults causes significant morbidity due to repeated throat infections, frequent antibiotic use, and impaired quality of life (QoL).[12]Traditional indications for tonsillectomy rely mainly on episode frequency, which may not adequately reflect the true disease burden experienced by patients and the impact on their daily functioning and well-being.[13]

Objectives

To assess changes in throat-related quality of life in adults with recurrent acute tonsillitis before and after tonsillectomy using the Tonsillectomy Outcome Inventory-14 (TOI-14), and to compare outcomes among groups stratified by episode frequency.

Methods-

A prospective observational study was conducted in the ENT OPD at Krishna Hospital, Krishna Institute of Medical Sciences, Karad (March 2024–November 2025). Adults with Recurrent Acute Tonsillitis were enrolled and categorized into three equal groups Tonsillectomy was done in all patients using Dissection and Snare Method and Throat-related quality of life was assessed using the Tonsillectomy Outcome Inventory-14 (TOI-14) preoperatively and postoperatively after 4months follow up.

Selection criteria

The study employed an observational, prospective design to evaluate the quality of life (QoL) in adult patients with recurrent acute tonsillitis before and after undergoing tonsillectomy. Data were collected pre-operatively and post-operatively using the Tonsillectomy Outcome Inventory-14 (TOI-14) scoring system.

Participants were categorized into three groups based on sore throat episode frequency:

1. Group 1: ≥3 episodes in 1 year (Danish National Guidelines).
2. Group 2: ≥7 episodes in the past year, ≥5 in each of the previous 2 years (Scottish Guideline).
3. Group 3: ≥7 episodes in past years, ≥5 in each of the previous 2 years (Paradise Criteria).

TABLE 1: Participants divided on the basis of these guidelines

CRITERIA	DANISH NATIONAL GUIDELINES(DNG)	SCOTTISH INTERCOLLEGIATE GUIDELINE NETWORK(SIGN)	PARADISE CRITERIA
Number of sore throat episodes	≥3 episodes in previous 2 years	≥5 in previous 2years	≥7 in previous 2years
Clinical findings	No requirements	Episodes should be disabling &prevent normal functioning , to be clinically significant	Episodes must present min of one of the following-(a)fever≥38.3^{0}C(b) cervical adenopathy(c) tonsillar exudates(d) positive culture for Group A beta hemolytic streptococcus
Documentation	No requirements	Well documented	Well documented
Treatment	No requirements	To be adequately treated	Adequately treated with antibiotics

Follow up time: 4months post tonsillectomy surgery

Inclusion Criteria:

- Patients aged 18–35 years, irrespective of both sexes
- Diagnosed with recurrent acute tonsillitis (≥3 episodes in the past 12 months).
- Conditions included:
  - Peritonsillitis.
  - Streptococcal carriers.
  - Obstructive sleep apnea (OSA).
  - Tonsillar hypertrophy (Grade 1–4).

Exclusion Criteria:

- Patients having –

-any associated malignancies
-Blood dyscrasias.
-Palatal abnormalities (e.g., submucous cleft palate).
-Down's syndrome.

TONSILLECTOMY OUTCOME INVENTORY -14(TOI-14) QUESTIONAIRRE

SL.NO	FACTORS	NO PROBLEM (0)	SMALL PROBLEM (1)	MEDIUM PROBLEM (2)	MAJOR PROBLEM (3)	IT CAN'T GET ANY WORSE (4)
1)	Dry throat					
2)	Tough secretion (mucus) in the throat					
3)	Neck pain					
4)	Difficulty swallowing					
5)	Feeling of illness					
6)	Impaired physical ability to work (work/daily chores)					
7)	Frequency of doctor visits					
8)	Costs of medical visits (transportation, lost work, etc.)					

TONSILLECTOMY OUTCOME INVENTORY -14(TOI-14) QUESTIONAIRRE(contd..)

SL.NO	FACTORS	NO PROBLEM (0)	SMALL PROBLEM (1)	MEDIUM PROBLEM (2)	MAJOR PROBLEM (3)	IT CAN'T GET ANY WORSE (4)
9)	Frequency of antibiotics					
10)	Cost of medicines					
11)	Missing work/school due to throat infections/throat discomfort					
12)	Reduced participation in events or activities due to throat discomfort					
13)	Fewer gatherings with friends/family due to throat discomfort					
14)	Sadness due to frequent sore throats/throat ailments					

Data collection and analysis-

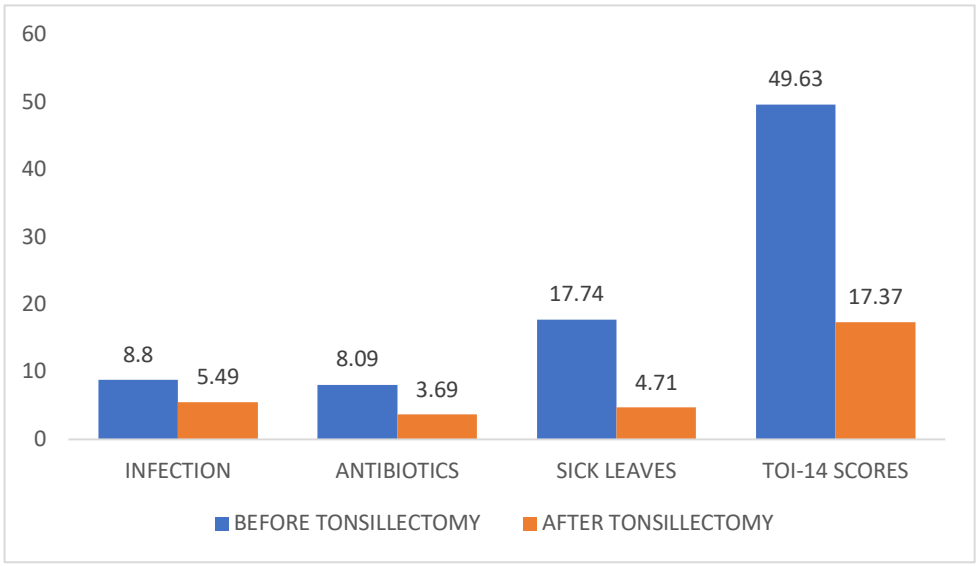
The following are the graphs with results showing changes before and after tonsillectomy in the three criteria in which patients were grouped, i.e, Paradise Criteria, Danish National Guidelines (DNG), Scottish Intercollegiate Guidelines Network (SIGN):

Graph 1 shows antibiotic usage, sick leaves and infections (in average no of days), Tonsillectomy Outcome Inventory -14 (TOI-14 scores) of paradise criteria before and after tonsillectomy.

BEFORE TONSILLECTOMY-
Mean antibiotics use for DNG 4.09±1.687, Paradise 8.09±2.369, SIGN 6.06±1.626. Sick leave varied (9.11±4.431DNG, 17.74±6.718 PARADISE, 12.71±5.366 SIGN).

GRAPH 1-

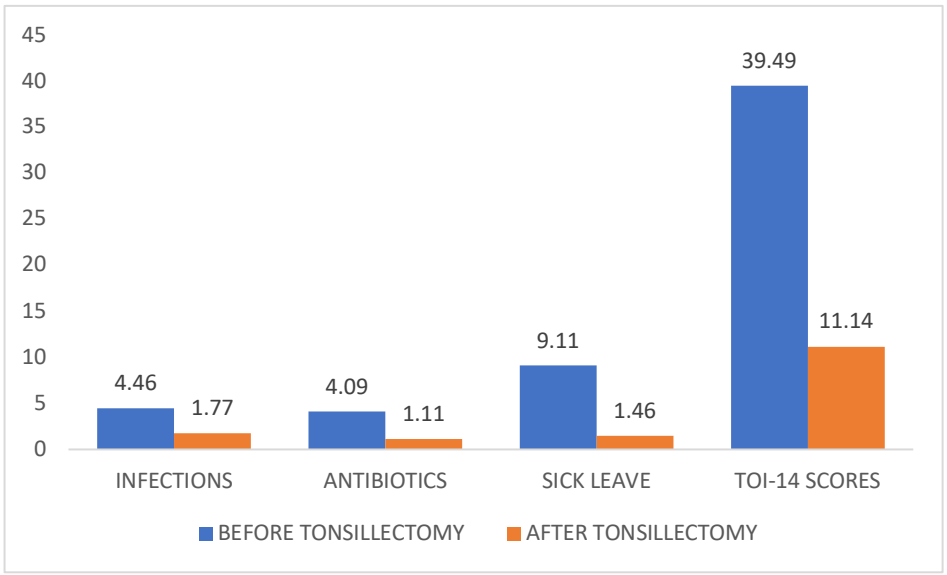
PARADISE CRITERIA-



Graph 2 below shows antibiotic usage, sick leaves and infections (in average no of days), Tonsillectomy Outcome Inventory -14 (TOI-14 scores) of DNG criteria before and after tonsillectomy.

GRAPH 2-

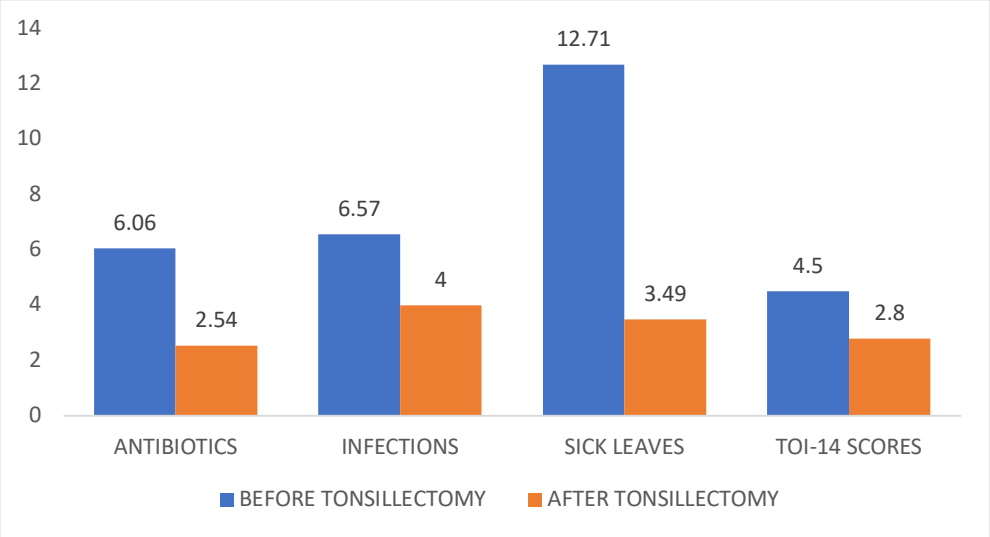
DNG CRITERIA-



Graph 3 below shows antibiotic usage, sick leaves and infections (in average no of days), Tonsillectomy Outcome Inventory -14 (TOI-14 scores) of SIGN criteria before and after tonsillectomy.

GRAPH 3-

SIGN CRITERIA-



POST TONSILLECTOMY-

Sick leave reduced to 1.46±2.005 (DNG), 4.71±2.936 (Paradise), and 3.40±2.892 (SIGN). Antibiotic use fell to 1.11±1.231, 3.69±2.083, and 2.54±1.686 respectively (total 2.45±1.990). Sick leave also reduced to 1.46±2.005 (DNG), 4.71±2.936 (Paradise), and 3.40±2.892 (SIGN).

Quality-of-life assessment using the Tonsillectomy Outcome Inventory-14 (TOI-14) demonstrated significant and marked postoperative improvement across all study groups. Preoperative TOI-14 scores differed significantly , with highest symptom burden observed in the Paradise group (49.63±6.979), followed by SIGN (41.54±8.580) and DNG (39.49±8.719). Postoperatively, TOI-14 scores decreased substantially in all groups , with means of 11.94±9.582 (DNG), 17.37±9.988 (Paradise), and 12.40±10.376 (SIGN), total 13.90±10.195. The magnitude of change was also statistically significant , with reductions of 27.54±6.359, 32.26±6.128, and 29.14±5.991 respectively in DNG, PARADISE, SIGN criteria.

TOI-14 BEFORE SURGERY	DNG ≥3/yr	35	39.49
	Paradise ≥7/yr	35	49.63
	SIGN ≥5/yr	35	41.54
	Total	105	43.55
TOI- 14 POST SURGERY	DNG ≥3/yr	35	11.94
	Paradise ≥7/yr	35	17.37
	SIGN ≥5/yr	35	12.40
	Total	105	13.90
TOI-14 CHANGE	DNG ≥3/yr	35	27.54
	Paradise ≥7/yr	35	32.26
	SIGN ≥5/yr	35	29.14
	Total	105	29.65

RESULTS

Mean episodes in the past year differed across groups: DNG 4.46±1.771, Paradise 8.80±2.273, SIGN 6.57±1.577 ($p<0.001$; total 6.61±2.589). Mean antibiotics use also differed (DNG 4.09±1.687, Paradise 8.09±2.369, SIGN 6.06±1.626. Sick leave varied (9.11±4.431, 17.74±6.718, 12.71±5.366; $p=0.025$). Preoperative TOI-14 means differed: DNG 39.49±8.719, Paradise 49.63±6.979, SIGN 41.54±8.580. Postoperative means were DNG 11.94±9.582, Paradise 17.37±9.988, SIGN 12.40±10.376. Mean TOI-14 change differed (27.54±6.359, 32.26±6.128, 29.14±5.991).
Mean hospital stay differed: DNG 1.86±0.810 days, Paradise 2.03±0.822, SIGN 1.43±0.608. Post-year infections, antibiotics, and sick leave differed significantly.

DISCUSSION-

The aim of the present study was to evaluate the impact of tonsillectomy on disease-specific quality of life and clinical burden among adults suffering from recurrent acute tonsillitis, and to compare outcomes across commonly used episode-frequency based criteria groups (DNG ≥3/year, Paradise ≥7/year, and SIGN ≥5/year).

The study specifically aimed to relate quality-of-life improvement to clinically meaningful measures of disease burden and healthcare utilization, including the number of infection/episode events, antibiotic courses, and sick leave days in the year before and after surgery.[14]

By stratifying patients into DNG, Paradise, and SIGN criteria groups with equal sample size (n = 35 each; total n = 105), the study enabled structured comparison of how baseline severity translates into quality-of-life impairment and postoperative recovery, while also documenting whether proportional benefit is consistent across different thresholds of recurrent tonsillitis.

The inclusion of TOI-14 provides a sensitive, disease-specific patient-reported outcome measure that captures real-world improvement beyond clinical examination findings.[15]

CONCLUSION

This study evaluated post-tonsillectomy quality of life and clinical burden. The aim of the present study was to evaluate the impact of tonsillectomy on disease-specific quality of life and clinical burden among adults suffering from recurrent acute tonsillitis, and to compare outcomes across commonly used episode-frequency based criteria groups (DNG ≥3/year, Paradise ≥7/year, and SIGN ≥5/year).[16]

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The results demonstrate that tonsillectomy was associated with substantial improvement in disease-specific quality of life along with a marked reduction in post-year healthcare utilization indicators.[18]

The central outcome of quality-of-life improvement was robustly demonstrated using TOI-14.[19]

Overall, the study concludes that tonsillectomy in adults with recurrent acute tonsillitis produced substantial improvement in disease-specific quality of life and meaningful reductions in infections.[20] This study also shows that the DNG criteria has the most drastic improvement regarding quality of life based on TOI-14 scoring system.

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