



Contents lists available at ScienceDirect

International Journal of Pediatric Otorhinology

journal homepage: <http://www.ijporlonline.com/>

Do race/ethnicity or socioeconomic status affect why we place ear tubes in children?

Carrie L. Nieman^a, David E. Tunkel^{a, b}, Emily F. Boss^{a, b, c, *}^a Department of Otolaryngology–Head and Neck Surgery, Johns Hopkins University School of Medicine, 601 N. Caroline St., 6th Floor, Baltimore, MD 21287, USA^b Department of Otolaryngology–Head and Neck Surgery, Division of Pediatric Otolaryngology, Johns Hopkins University School of Medicine, 601 N. Caroline St., 6th Floor, Baltimore, MD 21287, USA^c Armstrong Institute for Patient Safety and Quality, Johns Hopkins University School of Medicine, 750 E Pratt St, 15th Floor, Baltimore, MD 21202, USA

ARTICLE INFO

Article history:

Received 21 February 2016

Received in revised form

4 June 2016

Accepted 8 June 2016

Available online 11 June 2016

Keywords:

Otitis media

Tympanostomy tubes

Health disparities

Overuse

Minority health care

ABSTRACT

Introduction: Despite recent concerns about potential overuse of tympanostomy tube (TT) placement to treat otitis media in children, utilization of this common procedure in the U.S. has been shown to be relatively less common among minority children. It is not known if the indications for TT differ by child race/ethnicity and/or socioeconomic status (SES). Our objective is to analyze the association of patient- and neighborhood-level demographics and SES with clinical indications for TT.

Methods: We conducted a retrospective chart review of children who underwent TT at single urban academic tertiary pediatric care center in a 6-month period (8/2013–3/2014). Children with congenital anomalies or syndromic diagnoses were excluded (50/137 children, 36.5%). Children were grouped by primary TT indication, recurrent acute otitis media (RAOM) or chronic otitis media with effusion (OME). Group characteristics were compared using t-tests and chi-square analyses, and logistic regression was performed to assess the association between demographics and TT indication.

Results: 87 children were included in this analysis (mean age = 2.8 years, 1–6 years). The most common indication for TT was RAOM (53%), and these children had a mean of 6 AOM episodes/year. Indications for TT varied significantly by the patient's neighborhood SES (median neighborhood income \$70,969.09–RAOM vs \$58,844.95–OME, p-value = 0.009). Those undergoing TT for RAOM were less likely to live in a high-poverty neighborhood (OR = 0.36, p-value = 0.02), whereas children who underwent TT for OME were more likely to live in a high-poverty neighborhood. There was no significant difference in indication by race/ethnicity or insurance type.

Conclusions: In this population, TT indications differed by SES. Among children receiving tubes, those from high poverty areas were more likely than those from low poverty neighborhoods to receive tubes for the indication of OME as opposed to RAOM. This finding suggests that concerns for appropriate use of TT in the setting of RAOM may be specific to a more affluent population. Future prospective patient-centered research will evaluate cultural and economic influences for families pursuing TT placement, as well as factors considered by physicians who make surgical recommendations.

© 2016 Elsevier Ireland Ltd. All rights reserved.

1. Introduction

Otitis media (OM) is one of the most common reasons children and their families seek pediatric care in the United States, second

only to routine health maintenance visits [1]. Tympanostomy tube (TT) placement mirrors the high prevalence of OM, and is the most common ambulatory surgery performed on children in the United States [2,3]. Rates of TT vary internationally, with lower rates in Norway and Australia and higher rates in countries, such as the Netherlands, Iceland, and Denmark [4–7]. The two broadest indications for TT based on current evidence-based guidelines are recurrent acute otitis media (RAOM) and long-term otitis media with effusion (OME) [2]. While the goals of current practice are to provide patient-centered, evidence-based, and high-value care,

* Corresponding author. Johns Hopkins University School of Medicine, 601 N. Caroline St., 6th Floor, Baltimore, MD 21287, USA.

E-mail addresses: cnieman1@jhmi.edu (C.L. Nieman), dtunkel@jhmi.edu (D.E. Tunkel), erudnic2@jhmi.edu (E.F. Boss).

potential overuse of common procedures, including TT, raise concerns about the appropriateness of surgery in some circumstances [8,9]. A recent summit addressing overuse in healthcare selected TT as one of 5 common procedures warranting further scrutiny [10]. These national concerns exist alongside concurrent efforts to provide equitable care to children and families and address disparities in healthcare delivery and outcomes observed in children with different race/ethnicity and socioeconomic status (SES).

Race/ethnicity and SES impact pediatric care, including diagnosis, treatment, and outcomes. These sociodemographic differences have been demonstrated for a range of conditions and procedures, including renal and liver transplantation, appendicitis, obesity, asthma, cochlear implantation, sleep-disordered breathing, OM, and TT [11–16]. Healthcare disparities stem from proposed mechanisms that are multifactorial and evolving [17–19]. For OM, a number of factors have been associated with increased risk of OM in children, such as race/ethnicity, SES, exposure to cigarette smoke, and daycare attendance [16,20–22]. Similarly, rates of TT placement and broad-spectrum antibiotic use for OM vary by race/ethnicity and SES. For example, white children and children with uninterrupted insurance coverage are more likely to undergo TT [16,23–26].

Analyses of differences in use of healthcare by race/ethnicity and SES have largely focused on “underuse” of surgery or treatment, or disparities, when compared to White patients, with relatively limited understanding of potential differences in overuse by race/ethnicity and SES [27]. Several studies document general concerns of overuse of TT with high rates of guideline-discordant care and large regional variation in the rates of TT [28,29]. However, there is some evidence from adult literature that overuse of care may be greater among White adults than minorities across a range of procedures and tests [27]. These findings raise concern about potential differences in TT placement by race/ethnicity and SES that may represent a complex interplay between overuse and underuse of care. The overuse literature within pediatrics is scant, with few studies of overuse specifically evaluating race/ethnicity and SES [30].

In order to assess appropriate and equitable use of TT in children, we must also analyze the indications for TT among various patient groups. We sought to evaluate associations between TT indications and patient- and community-level demographic and socioeconomic factors. Based on prior literature, we hypothesized that in one urban healthcare community, children of minorities and low SES were more likely to undergo TT insertion for OME as compared to surgery for RAOM.

2. Materials & methods

2.1. Study cohort

We retrospectively reviewed charts of children who underwent TT over a 6-month period (8/28/2013–3/27/2014) at a single urban academic tertiary pediatric care center. Patients were evaluated and treated by four clinicians in the division of Pediatric Otolaryngology. A total of 137 children underwent TT during the 6-month period. We excluded children with congenital anomalies or syndromes ($n = 50$), as these children have uniquely high risks for OM and learning/developmental delays, and thus more prominent indications for TT. We therefore analyzed a final study cohort of 87 children with age <18 years. Conduct of this research was approved by the Johns Hopkins School of Medicine Institutional Review Board.

2.2. Primary outcome

The primary outcome of interest was the principle clinical indication for TT, either RAOM or OME, as defined in the operative and clinic notes. When patients had multiple TT indications, the primary TT indication was considered the indication best supported by the patient history and examination findings as documented in the clinic notes. If discrepancy existed between the primary indication in the operative note and clinic notes, the indication for TT from clinic notes were considered to be correct.

2.3. Sociodemographic variables

Demographic and socioeconomic-related variables were the primary co-variables. Patient demographics were obtained from the chart and included patient age at the time of surgery, gender, self-reported race/ethnicity, insurance status, and zip code [31]. Race/ethnicity was categorized as non-Hispanic White, Black, or Other, which included the categories Asian, other, unknown, and multi-racial, as defined by the demographics provided in the chart, given small sample sizes. We categorized insurance status as a binary variable, private or public insurance (Medicaid Assistance). No uninsured patients received TT insertion during this time period.

We used the patient's zip code and the US Census Bureau American Factfinder (<http://factfinder.census.gov/>) to collect information about patient's neighborhood, which were used as proxies of family SES, specifically neighborhood median household income, poverty level, and racial/ethnic diversity. Neighborhood-level statistics are available by zip code tabulation areas (ZCTA), which approximate zip codes but are not identical, and have been used as single measures or combined into SES indices and used as proxies of SES in a range of studies, including pediatric care [32–36]. We reported neighborhood median household income as a continuous variable and a categorical variable divided into quartiles. Neighborhood poverty level was reported as a continuous variable and a binary variable, divided by the median poverty level. We defined low-poverty neighborhood as less than or equal to 9.2% poverty and high-poverty neighborhood as greater than 9.2% poverty. Neighborhood racial/ethnic composition was based on the percentage of the ZCTA identified as White.

The clinical history related to otitis media was abstracted from the medical record. We collected the number of OM episodes documented in the chart within the 12 months prior to TT insertion. Documentation of secondhand smoke exposure, living with siblings, daycare or school attendance, history of prematurity, and current diagnosis of speech delay were also abstracted from the medical record.

2.4. Data analysis

An observational, patient-level analysis was performed. Patient demographics were analyzed using descriptive statistics. Distributions of groups by TT indication were compared using t-tests and chi-squared analyses. Logistic regressions was performed to assess the association between social demographics and TT indication. A p value of <0.05 was considered significant and was adjusted for multiple comparisons. Stata/IC 11 for Windows (StataCorp LP, College Station, TX) was utilized for all variable coding and statistical analyses.

3. Results

87 children without a history of developmental delay and/or craniofacial abnormality underwent TT insertion between August 2013 and March 2014. Patient and neighborhood-level

Download English Version:

<https://daneshyari.com/en/article/4111395>

Download Persian Version:

<https://daneshyari.com/article/4111395>

[Daneshyari.com](https://daneshyari.com)