

Six point seven percent of children may have tube reinsertions.

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Population-based studies in otologic epidemiology (N813)

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Sudden sensorineural hearing loss: evidence from Taiwan

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Learning Objectives: Using the The National Health Insurance research Database to explore the risks of sudden hearing loss in Taiwan.

Taiwan's National Health Insurance program was implemented in March 1995. The National Health Insurance research Database contains registration files and original claim data for reimbursement. The databases are provided to researchers in Taiwan for study proposes. The Taiwan National Health Research Institute has validated the representativeness of the LHID2000 relative to the whole population of NHI enrollees in terms of gender distribution. In addition, several studies have demonstrated the high validity of the data taken from the NHI programme.

Possible causes of SSNHL may include viral or bacterial infection, circulatory disturbance in the area of the anterior inferior cerebellar artery, acoustic tumor, peri-lymphatic fistula, environment, diet or weather. SSNHL is also occasionally preceded by a common cold or upper respiratory tract infection, as reported in patients with vestibular neuritis or Ménière's disease.

We find that for the period under examination, gender-specific incidence rates per 100,000 of the population were 8.85 for males, and 7.79 for females, and that there was an increase in age-specific SSNHL incidence with age. After adjusting for seasonality, months and trends, there is no significant relationship between monthly SSNHL incidence rates and weather conditions. There is indeed a relationship between physician and hospital characteristics and the LOS for SSNHL patients. Risk of sudden sensorineural hearing loss did not increase following a recent herpes zoster attack. Male patients with SSNHL had a higher proportion of prior OSA than non-SSNHL-diagnosed controls. There was an association between AMI and prior SSNHL.

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Population-based studies in otologic epidemiology (N813)

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Risk of Sudden Sensorineural Hearing Loss in Stroke Patients: A 5-year Nationwide Investigation of 44,460 Patients

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Learning Objectives: Post-stroke sudden sensorineural hearing loss (SSNHL) can hinder communication between patients and healthcare professionals, thereby restricting participation in rehabilitation programs and limiting improvements in physical performance. However, the relationship between stroke and SSNHL remains unclear. This study employed a nationwide population-based dataset to investigate the relationship between stroke and SSNHL.

Objective: Post-stroke sudden sensorineural hearing loss (SSNHL) can hinder communication between patients and healthcare professionals, thereby restricting participation in rehabilitation programs and limiting improvements in physical performance. However, the relationship between stroke and SSNHL remains unclear. This study employed a nationwide population-based dataset to investigate the relationship between stroke and SSNHL.

Methods: The Taiwan Longitudinal Health Insurance Database was used to compile data from 11,115 stroke patients and a comparison cohort of 33,345 matched non-stroke enrollees. Each patient was followed for 5 years to identify new onset SSNHL. Stratified Cox proportional-hazard regression analysis was used to examine the association of stroke with subsequent SSNHL.

Results: Among the 44,460 patients, 66 patients (55,378 person-years) from the stroke cohort and 105 patients (166,586 person-years) from the comparison cohort were diagnosed with SSNHL. The incidence of SSNHL was approximately twice as high among stroke patients than among non-stroke patients (1.19 and 0.63/1000 person-years, respectively). Stroke patients had a 71% increased risk of SSNHL, compared to non-stroke patients (adjusted hazard ratio (HR) = 1.71, 95% CI = 1.24–2.36). We also observed a remarkable increase in risk of SSNHL in stroke

patients (1) within one-year follow-up (adjusted HR = 5.65, 95% CI = 3.07–10.41) or (2) under steroid therapy during hospitalization (adjusted HR = 5.14, 95% CI = 2.08–12.75).

Conclusions: Patients with stroke had a higher risk of subsequent SSNHL compared to patients without stroke. In particular, stroke patients within one-year follow-up and those undergoing steroid therapy during hospitalization should be treated with the utmost caution, considering that the risk of SSNHL increases by more than 5-fold.

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What is new in Otolaryngology (R814)

ID: 814.1

What is New in Otolaryngology (R814): Intranasal surfactant treatment for Eustachian tube dysfunction and Otitis Media

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Learning Objectives: 1. Know the role of surfactants in normal Eustachian tube function 2. Know that there is reduction of surfactant in the nasopharyngeal ET in cases of OM 3. Learn the potential for using intranasal surfactant for the treatment of ETD and OM.

It has long been understood that endogenous surfactants play a significant role in the normal functionality of the Eustachian tube (ET) and that there is a reduction in surfactants at the nasopharynx (NP) and the nasopharyngeal end of the Eustachian tube in humans with secretory otitis media. The site of ET obstruction in chronic middle ear disease appears to be at the protympanic portion of the ET more so than at the NP cartilaginous portion, which is the portion affected by balloon Eustachian tuboplasty. Previous researches have used nebulized pulmonary surfactants and shown a trend or actual improvements in ET passive opening pressure in animal models. However, due to the physicochemical properties of surfactants, nebulizing them dramatically reduces their ability to 'de-stick' apposed mucosal surfaces. Additionally, animal-derived medical surfactants are expensive and pose potential risks. We have developed a fully synthetic surfactant delivered intranasally as an aerosol via a metered dose inhaler. In normal ears, our surfactant dramatically reduced passive opening pressure of the ET in mouse and gerbil models. In gerbils with otitis media with effusion, once-daily surfactant spray reduced days of effusion from 16 to 10; twice-daily surfactant spray and once-daily surfactant with steroid spray reduced it to 8 days; and twice-daily surfactant with steroid spray reduced it further to 6 days. There was no recurrence of effusion after stopping treatment. In chinchillas with acute bacterial otitis media, intranasal surfactant spray significantly reduced effusion, severity of disease and bacterial burden without concomitant administration of antibiotics. We postulate that our synthetic, dry powder, aerosolized surfactant spray when delivered intranasally in humans will ameliorate many cases of Eustachian tube dilatory dysfunction and a range of cases of otitis

media. Clinical studies to evaluate surfactant effects in humans with middle ear disease are planned.

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What is new in Otolaryngology (R814)

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Regeneration therapy for closing chronic tympanic membrane perforation using basic fibroblast growth factor combined with an atelocollagen

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Learning Objectives: Various attempts have recently been made to achieve perforated tympanic membrane closure using minimally invasive ambulatory surgical procedures. Since 2000, we have introduced a treatment procedure to promote regeneration of the tympanic membrane and closure of perforations using a synthetic graft material instead of autografts such as temporal fascia. In that procedure, a perforated tympanic membrane is filled with a synthetic graft material (atelocollagen sponge/silicon membrane; TERUDERMIS[®]), to which human fibroblast growth factor is applied to promote wound healing (bFGF preparation; Fibrast Spray[®]). This study describes the details of this treatment procedure and discusses the outcome of patients who presented to our outpatient clinic and underwent the procedure for tympanic membrane regeneration over a 2-year period between July 2009 and December 2011 and who were followed for at least 1 year with respect to the preoperative factors that affect closure outcome. Complete closure was achieved in 105 (66.5%) patients after 1 year of postoperative follow up. The incidence of residual perforation was significantly higher in patients with the following four factors than in those without: 1) unidentified perforation margin, 2) severe calcification of the tympanic membrane, 3) marginal perforation, and 4) large perforation. Logistic regression analysis adjusted for the effects of each factor identified marginal perforation as significant factors affecting the outcome of tympanic membrane closure. Tympanic membrane regeneration therapy can be applied to all patients. However, in patients whose perforation margin cannot be identified, in those with severe calcification of the tympanic membrane, and in those with marginal or large perforation, the therapy should be performed prudently after obtaining consent following sufficient explanation that tympanic membrane regeneration may not be achieved.

Various attempts have recently been made to achieve perforated tympanic membrane closure using minimally invasive ambulatory surgical procedures. Since 2000, we have introduced a treatment procedure to promote regeneration of the tympanic membrane and closure of perforations using a synthetic graft material instead of