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- To bring together a range of recently-published research reports, articles and electronic resources to help all staff keep up-to-date with research and practice.

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Full strategy

**Author(s):** Sininger, Yvonne S; Hunter, Lisa L; Hayes, Deborah; Roush, Patricia A; Uhler, Kristin M

**Source:** Ear and hearing; vol. 39 (no. 6); p. 1207-1223

**PubMedID:** 29624540

**Abstract:** The first objective of this study was to compare the predicted audiometric thresholds obtained by auditory steady state response (ASSR) and auditory brainstem response (ABR) in infants and toddlers when both techniques use optimal stimuli and detection algorithms. This information will aid in determining the basis for large discrepancies in ABR and ASSR measures found in past studies. The hypothesis was that advancements in ASSR response detection would improve (lower) thresholds and decrease discrepancies between the thresholds produced by the two techniques. The second objective was to determine and compare test times required by the two techniques to predict thresholds for both ears at the 4 basic audiometric frequencies of 500, 1000, 2000, and 4000 Hz. A multicenter clinical study was implemented at three university-based children's hospital audiology departments. Participants were 102 infants and toddlers referred to the centers for electrophysiologic testing for audiometric purposes. The test battery included wideband tympanometry, distortion-product otoacoustic emissions, and threshold measurements at four frequencies in both ears using ABR and ASSR (randomized) as implemented on the Interacoustics Eclipse systems with "Next-Generation" ASSR detection and FMP analysis for ABR. Both methods utilized narrow band CE-Chirp stimuli. Testers were trained on a specialized test battery designed to minimize test time for both techniques. Testing with both techniques was performed in one session. Thresholds were evaluated and confirmed by the first author and correction factors were applied. Test times were documented in system software. Results Corrected thresholds for ABR and ASSR were compared by regression, by the Bland-Altman technique and by matched pairs t tests. Thresholds were significantly lower for ASSR than ABR. The ABR-ASSR discrepancy at 500 Hz was 14.39 dB, at 1000 Hz was 10.12 dB, at 2000 Hz was 3.73 dB, and at 4000 Hz was 3.67 dB. The average test time for ASSR of 19.93 min (for 8 thresholds) was found to be significantly lower (p < 0.001) than the ABR test time of 32.15 min. One half of the subjects were found to have normal hearing. ASSR thresholds plotted in dB nHL for normal-hearing children in this study were found to be the lowest yet described except for one study which used the same technology.

**Conclusion:** This study found a reversal of previous findings with up to 14 dB lower thresholds found when using the ASSR technique with "Next-Generation" detection as compared with ABR using an automated detection (FMP). The test time for an audiogram prediction was significantly lower when using ASSR than ABR but was excellent by clinical standards for both techniques. ASSRs improved threshold performance was attributed to advancements in response detection including utilization of information at multiple harmonics of the modulation frequency. The stimulation paradigm which utilized narrow band CE-Chirps also contributed to the low absolute levels of the thresholds in nHL found with both techniques.

Database: Medline

OBJECTIVE: Tinnitus is a common otological condition that affects almost 10% of US adults. Research suggests that college students are vulnerable to tinnitus and hearing loss as they are exposed to traumatic levels of noise on a regular basis. Tinnitus and its influence in daily living continue to be underappreciated in the college-aged population. Therefore, the objective for the present study was to analyze prevalence and associated risk factors of tinnitus and tinnitus-related handicap in a sample of college-aged students.

DESIGN: A survey was administered to 678 students aged 18-30 years in a cross-section of randomly selected university classes. The survey was adopted from the National Health and Nutrition Examination Survey (2010). It inquired about demographic details, medical and audiological history, routine noise exposure, smoking, sound level tolerance, tinnitus, and tinnitus-related handicap in daily living. Tinnitus-related handicap was assessed by the Tinnitus Handicap Inventory (THI).

RESULTS: The prevalence of chronic, acute, subacute, and no tinnitus was 8.4%, 13.0%, 37.9%, and 40.7% respectively. Almost 9% of subjects with any form of tinnitus reported more than a slight tinnitus-related handicap (i.e., THI score ≥18). A multinomial regression analysis revealed that individuals with high noise exposure, high sound level tolerance score, recurring ear infections, and self-reported hearing loss had high odds of chronic tinnitus. Females showed higher prevalence of acute tinnitus than males. Individuals with European American ethnicity and smoking history showed high odds of reporting subacute tinnitus. Almost 10% of the subjects reported that they were music students. The prevalence of chronic, acute, and subacute tinnitus was 11.3%, 22.5%, and 32.4%, respectively, for musicians, which was significantly higher than that for nonmusicians. Music exposure, firearm noise exposure, and occupational noise exposure were significantly correlated with tinnitus. Temporal characteristics of tinnitus, self-reported tinnitus loudness, and sound level tolerance were identified as major predictors for the overall THI score.

CONCLUSIONS: Despite the reluctance to complain about tinnitus, a substantial portion of college-aged individuals reported tinnitus experience and its adverse influence in daily living. It was concluded that environmental and health-related factors can trigger tinnitus perception, while self-reported psychoacoustic descriptors of tinnitus may explain perceived tinnitus-related handicap in daily living by college-aged individuals. Future research is required to explore effects of tinnitus on educational achievements, social interaction, and vocational aspects of college students.

Database: Medline

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Author(s): Hughes, Sarah E; Hutchings, Hayley A; Rapport, Frances L; McMahon, Catherine M; Boisvert, Isabelle

Source: Ear and hearing; ; vol. 39 (no. 5); p. 922-934

Publication Type(s): Research Support, Non-u.s. Gov't Journal Article

PubMedID: 29424766
**Abstract:** OBJECTIVES Individuals with hearing loss often report a need for increased effort when listening, particularly in challenging acoustic environments. Despite audiologists’ recognition of the impact of listening effort on individuals’ quality of life, there are currently no standardized clinical measures of listening effort, including patient-reported outcome measures (PROMs). To generate items and content for a new PROM, this qualitative study explored the perceptions, understanding, and experiences of listening effort in adults with severe-profound sensorineural hearing loss before and after cochlear implantation. DESIGN Three focus groups (1 to 3) were conducted. Purposive sampling was used to recruit 17 participants from a cochlear implant (CI) center in the United Kingdom. The participants included adults (n = 15, mean age = 64.1 years, range 42 to 84 years) with acquired severe-profound sensorineural hearing loss who satisfied the UK’s national candidacy criteria for cochlear implantation and their normal-hearing significant others (n = 2). Participants were CI candidates who used hearing aids (HAs) and were awaiting CI surgery or CI recipients who used a unilateral CI or a CI and contralateral HA (CI + HA). Data from a pilot focus group conducted with 2 CI recipients were included in the analysis. The data, verbatim transcripts of the focus group proceedings, were analyzed qualitatively using constructivist grounded theory (GT) methodology. RESULTS A GT of listening effort in cochlear implantation was developed from participants’ accounts. The participants provided rich, nuanced descriptions of the complex and multidimensional nature of their listening effort. Interpreting and integrating these descriptions through GT methodology, listening effort was described as the mental energy required to attend to and process the auditory signal, as well as the effort required to adapt to, and compensate for, a hearing loss. Analyses also suggested that listening effort for most participants was motivated by a need to maintain a sense of social connectedness (i.e., the subjective awareness of being in touch with one’s social world). Before implantation, low social connectedness in the presence of high listening effort encouraged self-alienating behaviors and resulted in social isolation with adverse effects for participant’s well-being and quality of life. A CI moderated but did not remove the requirement for listening effort. Listening effort, in combination with the improved auditory signal supplied by the CI, enabled most participants to listen and communicate more effectively. These participants reported a restored sense of social connectedness and an acceptance of the continued need for listening effort. CONCLUSION Social connectedness, effort-reward balance, and listening effort as a multidimensional phenomenon were the core constructs identified as important to participants’ experiences and understanding of listening effort. The study’s findings suggest: (1) perceived listening effort is related to social and psychological factors and (2) these factors may influence how individuals with hearing loss report on the actual cognitive processing demands of listening. These findings provide evidence in support of the Framework for Understanding Effortful Listening a heuristic that describes listening effort as a function of both motivation and demands on cognitive capacity. This GT will inform item development and establish the content validity for a new PROM for measuring listening effort.

**Database:** Medline

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4. Psychometric Properties and Factor Structure of a New Scale to Measure Hyperacusis: Introducing the Inventory of Hyperacusis Symptoms.

**Author(s):** Greenberg, Benjamin; Carlos, Megan

**Source:** Ear and hearing; ; vol. 39 (no. 5); p. 1025-1034

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**PubMedID:** 29742543
Abstract: OBJECTIVES Despite increasing interest in hyperacusis and other disorders of auditory sensitivity, there is still a lack of valid, standardized assessment tools to measure symptom severity, treatment outcomes, and diagnostic differentiation. Accordingly, this study sought to create a new scale that is reliable, valid, brief, and easy to score with the purpose of filling this gap. DESIGN Original items were constructed through review of currently existing models of hyperacusis measurement, as well as qualitative data collected from professional audiologists and individuals reporting heightened audiological sensitivity with tinnitus. An initial 26-item scale yielded sound reliability and validity properties. Refinement based on review of initial data resulted in a 25-question second version with a maximum score of 100. A total of 450 completed survey protocols were analyzed from 469 refined Inventory of Hyperacusis Symptoms (IHS) administrations collected online, representing individuals from 37 countries with a mean age of 34.8 years. RESULTS Internal consistency reliability analysis yielded a Cronbach’s α of 0.93, indicating excellent reliability. Furthermore, the IHS showed sound convergent validity with established measures of quality of life, anxiety, and depression in bivariate correlation analysis of Pearson’s r. Factor analysis revealed a dimensional structure containing five factors, which were designated psychosocial impact, emotional arousal, functional impact, general loudness, and communication. Analysis of variance between perceived global hyperacusis severity categories provided a preliminary framework for scoring thresholds. Although the level of hearing loss did not correlate with IHS scores, increased tinnitus symptoms were a significant factor in predicting hyperacusis distress and severity. CONCLUSION These initial results demonstrated sound statistical properties of the IHS and usefulness as a hyperacusis measurement tool in research and clinical practice. Factor structure and scale dimensions allow for differentiation between subtypes of loudness, annoyance, fear, and pain based on responses to clusters of specific items within the dimensional factor structure of the scale, and may thus prove useful in clinical practice and research.

Database: Medline

5. Hearing Loss Contributes to Balance Difficulties in both Younger and Older Adults.

Author(s): Kowalewski, Victoria; Patterson, Rita; Hartos, Jessica; Bugnariu, Nicoleta

Source: Journal of preventive medicine; 2018; vol. 3 (no. 2)

Publication Date: 2018

Publication Type(s): Journal Article

PubMedID: 29951645

Abstract: Objective The number of steps required to regain balance is an easily obtainable clinical outcome measure. This study assessed whether number of steps during loss of balance could identify older adults with hearing loss who have balance deficits. We aimed to answer two questions: 1) Does hearing loss negatively affect the ability to regain balance, as reflected by an increased number of steps needed to respond to a perturbation while simultaneously attending to speech-in-noise; and 2) Do hearing aids improve balance control, reflected by a decrease in number of steps needed to regain balance? Methods 20 young adults and 20 older adults with normal hearing, and 19 older adults with hearing loss performed an auditory-balance dual-task. Participants were asked to listen and repeat back sentences from a standardized audiology test, while simultaneously responding to backward surface translations. Outcome measures were performed on the auditory test and number of steps needed to regain balance. Repeated measures ANCOVA models were run in using group, time, hearing levels, and perturbation levels as predictors. Results Auditory scores confirmed difficulty hearing speech-in-noise in older adults with hearing loss and no hearing aids, and in young and older adults with normal hearing and simulated
hearing loss. Results showed that group, auditory and balance conditions are significantly related to both outcomes measures and time is not significant for steps. Older adults with hearing loss had a significant increase in number of steps needed to regain balance compared to young adults and older adults with normal hearing. Conclusion Number of steps may be an appropriate clinical assessment tool for identifying fall risk in older adults with hearing loss. Further research needs to be performed to identify proper assessments and treatment interventions for older adults with hearing loss who have balance deficits.

Database: Medline


Author(s): Singer, Abd Elrheem Ahmed; Abdel-Naby Awad, Osama G; El-Kader, Rafeek Mohamed Abd; Mohamed, Ahmed Rabeh

Source: American journal of otolaryngology; 2018; vol. 39 (no. 2); p. 88-93

Publication Date: 2018

Publication Type(s): Journal Article

PubMedID: 29331307

Available at American Journal of Otolaryngology - from ProQuest (Hospital Premium Collection) - NHS Version

Abstract: PURPOSE Chronic suppurative otitis media (CSOM) is the major cause of hearing impairment, especially conductive hearing loss. Few patients also had sensorineural component, the sensorineural hearing loss (SNHL) in CSOM is controversial, especially for safe mucosal type. This study aims to assess the relationship between the frequency of SNHL development in patients with safe mucosal CSOM and its relation to patient's age, sex, duration of disease, size of perforation and different audiological findings.

MATERIAL AND METHODSThis is a prospective study conducted from June 2016 to June 2017 in a tertiary referral hospital. 200 patients with unilateral mucosal type of CSOM with normal contralateral ear were included in the study. The diseased ears were taken as study ears and normal ears as control ears in all patients. Detailed otologic history, clinical and audiometric findings were recorded and analyzed. Results were statistically compared in all patients for both study and control ears using different parameters.

RESULTSTwenty patients had an average bone conduction threshold of all frequencies above 25dB, which implies SNHL (10%). The incidence of SNHL was statistically significant at higher speech frequencies. The incidence increased with the presence of Diabetes Mellitus, smoking, duration of disease, presence of active discharge and the increase in size of perforation. However, it is not age dependent and there was no difference between males and females.

CONCLUSIONSafe mucosal CSOM can cause SNHL with multiple predisposing factors.

Database: Medline


Author(s): Kim, Bong Jik; Han, Jae Joon; Shin, Seung Han; Kim, Han-Suk; Yang, Hye Ran; Choi, Eun Hwa; Chang, Mun Young; Lee, Sang-Yeon; Suh, Myung-Whan; Koo, Ja-Won; Lee, Jun Ho; Choi, Byung Yoon; Oh, Seung-Ha
Abstract: Congenital cytomegalovirus (cCMV) infection is a common congenital infection that causes sensorineural hearing loss (SNHL). Despite its substantial impact on public health and cost burden, epidemiology and clinical features of CMV-related SNHL have never been reported in the Korean populations. This study investigated the detailed audiologic phenotypes of cCMV infection to see if a specific SNHL pattern is associated with a particular clinical setting. A total of 38 patients with cCMV infection were studied retrospectively. Patients were classified into three groups with distinct demographics: clinically driven diagnosis (n=17), routine newborn CMV screening according to the NICU protocols (n=10), or referral to ENT for cochlear implant (CI) (n=11). The incidence of cCMV infection was 3.6%, showing 33.3% of SNHL among cCMV patients, 38% of asymmetric hearing loss, 29% of late-onset hearing loss, and diverse severity spectrum in patients with CMV-related SNHL. CI recipients with CMV-related SNHL showed a significantly improved speech perception. Surprisingly, in 36.4% of CI implantees, initial audiological manifestation was significant asymmetry of hearing thresholds between both ears, with better ear retaining significant residual hearing up to 50dB. CMV turns out to be a significant etiology of SNHL, first to date reported in the Korean pediatric population. Analysis of audiologic phenotypes showed a very wide spectrum of SNHL and favorable CI outcomes in case of profound deafness. Especially for the patients with asymmetric hearing loss, close surveillance of hearing should be warranted and CI could be considered on the worse side first, based on the observation of rapid progression to profound deafness of better side.

Database: Medline

8. Comparison between clinical and audiological results of tympanoplasty with modified sandwich technique and underlay technique.

Author(s): Nemade, Sanjana Vijay; Shinde, Kiran Jaywant; Naik, Chetana Shivadas; Qadri, Haris

Source: Brazilian journal of otorhinolaryngology; 2018; vol. 84 (no. 3); p. 318-323

Publication Date: 2018

Publication Type(s): Comparative Study Journal Article

PubMedID: 28476655

Abstract: INTRODUCTION: Surgical repair of the tympanic membrane, termed a type one tympanoplasty is a tried and tested treatment modality. Overlay or underlay technique of tympanoplasty is common. Sandwich tympanoplasty is the combined overlay and underlay grafting of tympanic membrane. OBJECTIVE: To describe and evaluate the modified sandwich graft (mediolateral graft) tympanoplasty using temporalis fascia and areolar fascia. To compare the clinical and audiological outcome of modified sandwich tympanoplasty with underlay tympanoplasty. METHODS: Total of 88 patients of chronic otitis media were studied. 48 patients (Group A) underwent type one tympanoplasty with modified sandwich graft. Temporalis fascia was
underlaid and the areolar fascia was overlaid. 48 patients (Group B) underwent type one tympanoplasty with underlay technique. We assessed the healing and hearing results. Results: Successful graft take up was accomplished in 47 patients (97.9%) in Group A and in 40 patients (83.3%) Group B. The average Air-Bone gap closure achieved in Group A was 24.4±1.7dB while in Group B; it was 22.5±3.5dB. Statistically significant difference was found in graft healing rate. Difference in hearing improvement was not statistically significant. Conclusion: Double layered graft with drum-malleus as a 'meat' of sandwich maintains a perfect balance between sufficient stability and adequate acoustic sensitivity.

Database: Medline


Author(s): Felício, João Soares; de Souza d’Albuquerque Silva, Lilian; Martins, Carlliane Lima E Lins Pinto; Neto, João Felício Abrahão; de Lemos, Manuela Nascimento; de Souza Resende, Fabricio; da Silva, Wanderson Maia; de Alcântara, Angélica Leite; de Oliveira, Maria Clara Neres Iunes; de Souza Neto, Norberto Jorge Kzan; de Franco, Isabela Imbelloni Farias; Zahalan, Nathalie Abdallah; Janaú, Luisa Correa; de Souza, Ana Carolina Contente Braga; Santos, Flavia Marques; de Queiroz, Natércia Neves Marques; Mourão, Neyla Arroyo Lara; Dos Santos, Márcia Costa; Felício, Karema Miléo; de Melo, Franciane Trindade Cunha

Source: Diabetology & metabolic syndrome; 2018; vol. 10 ; p. 81

Publication Date: 2018
Publication Type(s): Journal Article
PubMedID: 30455746
Available at Diabetology & metabolic syndrome - from ProQuest (Hospital Premium Collection) - NHS Version
Available at Diabetology & metabolic syndrome - from BioMed Central
Available at Diabetology & metabolic syndrome - from Europe PubMed Central - Open Access

Abstract: Sensorineural hearing impairment has been associated with DM, and it is probably linked to the same pathophysiological mechanisms as well-established in microvascular diabetes complications. The study of otoacoustic emissions (OAEs) is useful to identify subclinical cochlear dysfunction. Therefore, the aim of this study was to evaluate the association between abnormal OAEs responses, diabetic kidney disease (DKD) and diabetic cardiac autonomic neuropathy (CAN). We performed a cross-sectional study with 37 type 1 DM patients without auditory symptoms, submitted to the study of Distortion Product Otoacoustic Emissions (DPOAEs) and screened for DKD and CAN. The otoacoustic emissions responses were considered abnormal in 27/37 (73%) patients. A correlation was found between abnormal OAEs responses and presence of DKD (r = 0.36, p < 0.05), and 14/16 (88%) patients with a lower amplitude of OAEs in 8 kHz frequency band presented DKD. Abnormal OAEs responses in the 6 kHz frequency band were correlated with the presence (r = 0.41, p = 0.01) and severity of CAN (r = 0.44, p < 0.001). Additionally, 7/9 (78%) patients with abnormal OAE responses in this frequency also presented abnormal CAN scores. Our results suggest that abnormal otoacoustic emissions responses in high frequency bands are associated with diabetes microvascular complications and could be a risk marker for DKD and CAN, presenting low sensitivity and high specificity. Therefore, assuming that hearing impairment is a pre-clinical stage of hearing loss, performing distortion product otoacoustic emissions in T1DM patients with microvascular...
complications could be useful to identify those who would be benefit with regular audiologic follow up and tighter diabetes control.

**Database:** Medline

**10. Autoimmune inner ear disease (AIED): A diagnostic challenge.**

**Author(s):** Ciorba, Andrea; Corazzi, Virginia; Bianchini, Chiara; Amoni, Claudia; Pelucchi, Stefano; Skarżyński, Piotr Henryk; Hatzopoulos, Stavros

**Source:** International journal of immunopathology and pharmacology; 2018; vol. 32 ; p. 2058738418808680

**Publication Date:** 2018

**Publication Type(s):** Journal Article

**PubMedID:** 30376736

**Abstract:** Autoimmune inner ear disease (AIED) has been defined as a condition of bilateral sensorineural hearing loss (SNHL), caused by an 'uncontrolled' immune system response. The inner ear can be the direct target of the immune response, but it can be additionally damaged by a deposition of circulating immune complexes or by systemic immune-mediated diseases. The clinical expression of immune-mediated inner ear disease shows a progressive bilateral and asymmetric SNHL profile, which typically benefits from a steroid and immunosuppressive therapy. The onset of AIED is between 3 and 90 days. Cochlear symptoms can be associated with vestibular disorders and in 15%-30% of cases, AIED occurs in the contest of a systemic autoimmune disease. Currently, the onset of immune-mediated SNHL is not a well-understood process and the pathogenetic mechanisms of AIED remain unclear. Furthermore, there are no standardized diagnostic criteria or reliable diagnostic tests for the diagnosis of AIED. Hence, the definition of immune-mediated cochleovestibular disorders is a challenging diagnosis based on exclusion. A close collaboration between otolaryngologists, audiologists and rheumatologists is recommended, in order to achieve the multidisciplinary management of this rare entity, since an early AIED identification and a prompt medical treatment might result in acceptable hearing outcomes. The paper describes the clinical features of AIED and offers a diagnostic flow-chart to use in the clinical assessment of this condition.

**Database:** Medline

**11. Expanding the Capacity of Otolaryngologists in Kenya through Mobile Technology.**

**Author(s):** Jayawarden, Asitha D L; Kahue, Charissa N; Cummins, Samantha M; Netterville, James L

**Source:** OTO open; 2018; vol. 2 (no. 1); p. 2473974X18766824

**Publication Date:** 2018

**Publication Type(s):** Journal Article

**PubMedID:** 30480210

**Abstract:** ObjectiveTo determine if reliable, objective audiologic data can be obtained by nonotolaryngology and nonaudiology practitioners using novel mobile technology in an effort to expand the capacity for early identification and treatment of disabling hearing loss in the developing world. Study Design Cross-sectional, proof-of-concept pilot study. Setting Screenings took place during an annual 2-week otolaryngology surgical mission in October 2016 in semirural Malindi, Kenya. Subject and Methods Eighty-seven patients (174 total ears) were included from 2 deaf schools
An automated, tablet-based, language-independent, clinically validated, play audiometry system and wireless otoscopic endoscopy via an iPhone or laptop platform was administered by Kenyan community health workers (CHWs) and nursing staff. Results Various degrees of hearing loss and otologic pathology were identified, including 1 child presumed to be deaf who was found to have unilaterally normal hearing. Other pathology included 2 active perforations, 2 healed perforations, 2 middle ear effusions, and 1 cholesteatoma. CHWs and nursing staff demonstrated proficiency performing audiograms and endoscopy. Patients screened in a deaf school were more likely to complete an unreliable audiogram than patients screened in other settings (P < .01). Conclusion This study demonstrates the feasibility of a non-otolaryngology-based hearing screening program. This may become an important tool in reducing the impact of hearing loss and otologic pathology in areas bereft of otolaryngologists and audiologists by allowing CHWs to gather important patient data prior to otolaryngologic evaluation.

Database: Medline

12. Advances in the Field of Bone Conduction Hearing Implants.

Author(s): McLeod, R W J; Culling, J F; Jiang, D

Source: Advances in oto-rhino-laryngology; 2018; vol. 81; p. 24-31

Publication Date: 2018

Publication Type(s): Journal Article Review

PubMedID: 29794422

Abstract: The number of marketed bone-conduction hearing implants (BCHIs) has been steadily growing, with multiple percutaneous devices and transcutaneous devices now available. However, studies assessing efficacy often have small sample sizes and employ different assessment methodologies. Thus, there is a paucity of evidence to guide clinicians to the most appropriate device for each patient. This paper outlines audiological guidelines for the latest devices, as well as research from the most up-to-date clinical trials. We also outline the evidence base for some potentially contentious issues in the field of bone conduction, including bilateral fitting of BCHIs in those with bilateral conductive hearing loss as well as the use of BCHIs in single-sided deafness (SSD). Bilateral fitting of BCHIs have been found to significantly increase the hearing thresholds in quiet and improve sound localization, but to give limited benefits in background noise. Studies conducted via multiple assessment questionnaires have found strong evidence of subjective benefits for the use of BCHIs in SSD. However, there is little objective evidence of benefit for SSD patients from sound localization and speech in noise tests.

Database: Medline

13. Effects of diabetes mellitus and systemic arterial hypertension on elderly patients' hearing.

Author(s): Rolim, Laurie Penha; Samelli, Alessandra Giannella; Moreira, Renata Rodrigues; Matas, Carla Gentile; Santos, Itamar de Souza; Bensenor, Isabela Martins; Lotufo, Paulo Andrade

Source: Brazilian journal of otorhinolaryngology; 2018; vol. 84 (no. 6); p. 754-763

Publication Date: 2018

Publication Type(s): Journal Article
INTRODUCTION

Chronic diseases can act as an accelerating factor in the auditory system degeneration. Studies on the association between presbycusis and diabetes mellitus and systemic arterial hypertension have shown controversial conclusions.

OBJECTIVE

To compare the initial audiometry (A1) with a subsequent audiometry (A2) performed after a 3 to 4-year interval in a population of elderly patients with diabetes mellitus and/or systemic arterial hypertension, to verify whether hearing loss in these groups is more accelerated when compared to controls without these clinical conditions.

METHODS

100 elderly individuals participated in this study. For the auditory threshold assessment, a previous complete audiological evaluation (A1) and a new audiological evaluation (A2) performed 3-4 years after the first one was utilized. The participants were divided into four groups: 20 individuals in the diabetes mellitus group, 20 individuals in the systemic arterial hypertension group, 20 individuals in the diabetes mellitus/systemic arterial hypertension group and 40 individuals in the control group, matching them with each study group, according to age and gender. ANOVA and Kruskal-Wallis statistical tests were used, with a significance level set at 0.05.

RESULTS

When comparing the mean annual increase in the auditory thresholds of the A1 with the A2 assessment, considering each study group and its respective control, it can be observed that there was no statistically significant difference for any of the frequencies for the diabetes mellitus group; for the systemic arterial hypertension group, significant differences were observed after 4kHz. For the diabetes mellitus and systemic arterial hypertension group, significant differences were observed at the frequencies of 500, 2kHz, 3kHz and 8kHz.

CONCLUSION

It was observed that the systemic arterial hypertension group showed the greatest decrease in auditory thresholds in the studied segment when compared to the other groups, suggesting that among the three studied conditions, hypertension seems to have the greatest influence on hearing.

Database: Medline


Author(s): Riga, Maria; Korres, George; Chouridis, Pantelis; Naxakis, Stephanos; Danielides, Vasilios

Source: International journal of pediatric otorhinolaryngology; Dec 2018; vol. 115; p. 156-164

Publication Date: Dec 2018

Publication Type(s): Journal Article Review

PubMedID: 30368378

Abstract: BACKGROUND

Congenital cytomegalovirus (CMV) infection is one of the most important risk factors for delayed onset and progressive hearing loss in children. However, the relevant literature is limited, heterogeneous and currently insufficient to provide guidance toward the effective monitoring of hearing acuity in these children.

OBJECTIVE

The aim of this study was to provide a systematic review focused on types of hearing loss that may escape diagnosis through universal neonatal hearing screening and/or present significant changes during childhood, such as progressive, fluctuating and late-onset hearing loss.

DATA SOURCES

A review of the present literature was conducted via the PubMed database of the US National Library of Medicine (www.pubmed.org) and Scopus database (www.scopus.com) with the search terms "late-onset hearing loss cytomegalovirus", "progressive hearing loss cytomegalovirus" and "fluctuating hearing loss cytomegalovirus".

STUDY ELIGIBILITY CRITERIA

Prospective or retrospective clinical studies were included if they presented a detailed audiological assessment, for a follow-up period of
METHODS The prevalence and time of diagnosis of progressive, fluctuating and late-onset hearing loss were considered as primary outcomes. Results were recorded separately for symptomatic and asymptomatic children, when possible.

RESULTS This analysis refers to a population of 181 children with CMV-induced hearing loss, who were diagnosed among 1089 with congenital CMV infection. The prevalence of CMV-induced hearing loss was significantly higher among symptomatic children (p < 0.0001), who were also significantly more likely to develop bilateral hearing loss (p = 0.001). There was not sufficient information on the prevalence, laterality, degree and time of diagnosis of progressive, fluctuating and late-onset hearing loss that could constitute the basis toward the report of specific follow-up guidelines.

CONCLUSIONS Further studies are needed in order to understand and quantify the potential effects of congenital CMV infection in the inner ear and hearing acuity. The results presented in the relative studies should be very carefully evaluated and compared to each other, since they correspond to substantially different cohorts, study designs, and result elaboration. Infants with congenital CMV infection should be closely monitored, regarding their hearing acuity at least during their preschool years, although substantial changes in hearing thresholds have been reported as late as the 16th year of age. Parental counseling is of outmost importance in order to minimize the numbers of children lost to follow-up.

Database: Medline

15. Predicting sequential bilateral cochlear implantation performance in postlingually deafened adults; A retrospective cohort study.

Author(s): Smulders, Yvette E; Hendriks, Thomas; Stegeman, Inge; Eikelboom, Robert H; Sucher, Cathy; Upson, Gemma; Chester Browne, Ronel; Jayakody, Dona; Santa Maria, Peter L; Atlas, Marcus D; Friedland, Peter L

Source: Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery; Dec 2018; vol. 43 (no. 6); p. 1500-1507

Publication Date: Dec 2018

Publication Type(s): Journal Article

PubMedID: 30022607

Available at Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery - from Wiley

Abstract: OBJECTIVE To identify which preoperative patient characteristics influence sequential bilateral cochlear implantation performance and to create a statistical model that predicts benefit. DESIGN Multicentre retrospective cohort study. SETTING All patients were operated in four academic teaching hospitals in Perth, Australia, and followed up by audiologists of the Ear Science Institute Australia. PARTICIPANTS A total of 92 postlingually deafened adult patients who had undergone sequential cochlear implantations between 19 June 1990 and 14 March 2016 were included. Patients were excluded if the 12-month follow-up consonant-nucleus-consonant (CNC) phoneme score was missing. MAIN OUTCOME MEASURE The effect of 18 preoperative factors on the CNC phoneme score in quiet (at 65 dB SPL) with the second cochlear implant (CI2) one year after implantation. RESULTS Two factors were positively correlated to speech understanding with CI2: Wearing a hearing aid (HA) before receiving CI2 (r = 0.46, P = 0.00) and the maximum CNC phoneme score with the first CI (CI1) (r = 0.21, P = 0.05). Two factors were negatively correlated: the length of hearing loss before CI2 in the second implanted ear (r = -0.25, P = 0.02) and preoperative pure tone average (PTA) (0.5, 1, 2 kHz) before CI2 in the second implanted ear (r = -0.27, P = 0.01). The following model could be created: predicted CNC phoneme score with CI2 (%) = 16 + (44 * HA use
before CI2 (yes)) - (0.22 * length of hearing loss before CI2 (years)) + (0.23 * CNC phoneme score with CI1 (%)). Because the effect of HA use before implantation played such a major role, we also created a model after exclusion of the HA factor: Predicted CNC phoneme score with CI2 (%) = 82 - (0.17 * length of hearing loss before CI2 (years)) - (0.27 * PTA in second implanted ear before CI2 (0.5, 1, 2 kHz)) + (0.20 * CNC phoneme score with CI1 (%)).

CONCLUSION

Advanced age or a long interval between implantations does not necessarily lead to poor CI2 results. Patients who are successful HA users before CI2, who have a low PTA before CI2, a high CNC phoneme score with CI1 and a limited length of hearing loss before CI2, are likely to be successful CI2 recipients.

Database: Medline

16. Oral steroids for hearing loss associated with otitis media with effusion in children aged 2-8 years: the OSTRICH RCT.

Author(s): Francis, Nick A; Waldron, Cherry-Ann; Cannings-John, Rebecca; Thomas-Jones, Emma; Winfield, Thomas; Shepherd, Victoria; Harris, Debbie; Hood, Kerenza; Fitzsimmons, Deborah; Roberts, Amanda; Powell, Colin Ve; Gal, Micaela; Jones, Sarah; Butler, Christopher C

Source: Health technology assessment (Winchester, England); Nov 2018; vol. 22 (no. 61); p. 1-114

Publication Date: Nov 2018

Publication Type(s): Research Support, Non-u.s. Gov't Clinical Trial

PubMedID: 30407151

Abstract: BACKGROUND Children with hearing loss associated with otitis media with effusion (OME) are commonly managed through surgical intervention, hearing aids or watchful waiting. A safe, inexpensive, effective medical treatment would enhance treatment options. Small, poorly conducted trials have found a short-term benefit from oral steroids. OBJECTIVE To determine the clinical effectiveness and cost-effectiveness of a 7-day course of oral steroids in improving hearing at 5 weeks in children with persistent OME symptoms and current bilateral OME and hearing loss demonstrated by audiometry. DESIGN Double-blind, individually randomised, placebo-controlled trial. SETTING Ear, nose and throat outpatient or paediatric audiology and audiovestibular medicine clinics in Wales and England. PARTICIPANTS Children aged 2-8 years, with symptoms of hearing loss attributable to OME for at least 3 months, a diagnosis of bilateral OME made on the day of recruitment and audiometry-confirmed hearing loss. INTERVENTION A 7-day course of oral soluble prednisolone, as a single daily dose of 20 mg for children aged 2-5 years or 30 mg for 6- to 8-year-olds, or matched placebo. MAIN OUTCOME MEASURES Acceptable hearing at 5 weeks from randomisation. Secondary outcomes comprised acceptable hearing at 6 and 12 months, tympanometry, otoscopic findings, health-care consultations related to OME and other resource use, proportion of children who had ventilation tube (grommet) surgery at 6 and 12 months, adverse effects, symptoms, functional health status, health-related quality of life, short- and longer-term cost-effectiveness. RESULTS A total of 389 children were randomised. Satisfactory hearing at 5 weeks was achieved by 39.9% and 32.8% in the oral steroid and placebo groups, respectively (absolute difference of 7.1%, 95% confidence interval -2.8% to 16.8%; number needed to treat = 14). This difference was not statistically significant. The secondary outcomes were consistent with the picture of a small or no benefit, and we found no subgroups that achieved a meaningful benefit from oral steroids. The economic analysis showed that treatment with oral steroids was more expensive and accrued fewer quality-adjusted life-years than treatment as usual. However, the differences were small and not statistically significant, and the sensitivity analyses demonstrated large variation in the results. CONCLUSIONSOME in children with documented hearing loss and attributable symptoms for
at least 3 months has a high rate of spontaneous resolution. Discussions about watchful waiting and other interventions will be enhanced by this evidence. The findings of this study suggest that any benefit from a short course of oral steroids for OME is likely to be small and of questionable clinical significance, and that the treatment is unlikely to be cost-effective and, therefore, their use cannot be recommended.

FUTURE WORK
Studies exploring optimal approaches to sharing natural history data and enhancing shared decision-making are needed for this condition.

TRIAL REGISTRATION
Current Controlled Trials ISRCTN49798431 and EudraCT 2012-005123-32.

FUNDING
This project was funded by the National Institute for Health Research (NIHR) Health Technology Assessment programme and will be published in full in Health Technology Assessment; Vol. 22, No. 61. See the NIHR Journals Library website for further project information.

Database: Medline

17. Avoiding Furosemide Ototoxicity Associated With Single-Ventricle Repair in Young Infants.

Author(s): Robertson, Charlene M T; Bork, Karin T; Tawfik, Gerda; Bond, Gwen Y; Henderson, Leonora; Dinu, Irina A; Khodayari Moez, Elham; Rebeyka, Ivan M; Garcia Guerra, Gonzalo; Joffe, Ari R

Source: Pediatric critical care medicine : a journal of the Society of Critical Care Medicine and the World Federation of Pediatric Intensive and Critical Care Societies; Nov 2018

Publication Date: Nov 2018

Publication Type(s): Journal Article

PubMedID: 30489485

Abstract: OBJECTIVE To reduce bilateral delayed-onset progressive sensory permanent hearing loss using a systems-wide quality improvement project with adherence to best practice for the administration of furosemide. DESIGN Prospective cohort study with regular audiologic follow-up assessment of survivors both before and after a 2007-2008 quality improvement practice change. SETTING The referral center in Western Canada for complex cardiac surgery, with comprehensive multidisciplinary follow-up by the Complex Pediatric Therapies Follow-up Program. PATIENTS All consecutive patients having single-ventricle palliative cardiac surgery at age 6 weeks old or younger. INTERVENTIONS A 2007-2008 quality improvement practice change consisted of a Parenteral Drug Monograph revision indicating slow IV administration of furosemide, an educational program, and an evaluation. MEASUREMENTS AND MAIN RESULTS The outcome measure was the prevalence of permanent hearing loss by 4 years old. Firth multiple logistic regression compared pre (1996-2008) to post (2008-2012) practice change occurrence of permanent hearing loss, adjusting for confounding variables, including all hospital days, extracorporeal membrane oxygenation, cardiopulmonary bypass time, age at first surgery, dialysis, and sepsis. From 1996 to 2012, 259 infants had single-ventricle palliative surgery at age 6 weeks old or younger, with 173 (64%) surviving to age 4 years. Of survivors, 106 (61%) were male, age at surgery was 11.6 days (9.0 d), and total hospitalization days by age 4 years were 64 (42); 18 (10%) had cardiopulmonary resuscitation and 38 (22%) had sepsis at any time. All 173 (100%) had 4-year follow-up. Pre- to postpractice change permanent hearing loss dropped from 17/100 (17%) to 0/73 (0%) of survivors. On Firth multiple logistic regression, the only variable statistically associated with permanent hearing loss was the pre- to postpractice change time period (odds ratio, 0.03; 95% CI, 0-0.35; p = 0.001). CONCLUSIONSA practice change to ensure slow IV administration of furosemide eliminated permanent hearing loss. Centers caring for critically ill infants, particularly those with single-ventricle anatomy or hypoxia, should review their drug administration guidelines and adhere to best practice for administration of IV furosemide.

**Author(s):** Brotto, Davide; Avato, Irene; Lovo, Elisa; Muraro, Eva; Bovo, Roberto; Trevisi, Patrizia; Martini, Alessandro; Manara, Renzo

**Source:** JAMA otolaryngology--head & neck surgery; Nov 2018

**Publication Date:** Nov 2018

**Publication Type(s):** Journal Article

**PubMedID:** 30419122

Available at JAMA otolaryngology--head & neck surgery - from EBSCO (MEDLINE Complete)

**Abstract:** Importance: Common cavity deformity is a rare congenital inner ear malformation associated with profound hearing loss and attributed to an early developmental arrest of the cochlear-vestibular structures. This narrative review highlights the need to identify reliable indicators of hearing rehabilitation outcome.

Observations: Despite its relatively simple definition, common cavity deformity varies widely in morphologic features, presence of cochlear nerve fibers and remnants of Corti organ, and outcome after cochlear or brainstem implant.

Conclusions and Relevance: Cochlear implant has been shown to be a valid option for common cavity deformity, but its outcome remains variable and poor. Identification of specific neuroradiologic, audiologic, and neurophysiologic prognostic features; tailoring of the surgical approach; and standardization of outcome measures are needed to optimize the management of common cavity deformity and hearing rehabilitation after implant.

**Database:** Medline

19. Comparing the International Classification of Functioning, Disability, and Health Core Sets for Hearing Loss and Otorhinolaryngology/Audiology Intake Documentation at Mayo Clinic.

**Author(s):** Alfakir, Razan; van Leeuwen, Lisette M; Pronk, Marieke; Kramer, Sophia E; Zapala, David A

**Source:** Ear and hearing; Oct 2018

**Publication Date:** Oct 2018

**Publication Type(s):** Journal Article

**PubMedID:** 30289788

**Abstract:** **OBJECTIVES** The International Classification of Functioning, Disability, and Health (ICF) Core Sets for Hearing Loss (CSHL) consists of short lists of categories from the entire ICF classification that are thought to be the most relevant for describing the functioning of persons with hearing loss. A comprehensive intake that covers all factors included in the ICF CSHL holds the promise of developing a tailored treatment plan that fully complements the patient’s needs. The Comprehensive CSHL contains 117 categories and serves as a guide for multiprofessional, comprehensive assessment. The Brief CSHL includes 27 of the 117 categories and represents the minimal spectrum of functioning of persons with HL for single-discipline encounters or clinical trials. The authors first sought to benchmark the extent to which Audiologist (AUD) and Otorhinolaryngologist (ORL) discipline-specific intake documentation, as well as Mayo Clinic’s multidisciplinary intake documentation, captures ICF CSHL categories.

**DESIGN** A retrospective study.
design including 168 patient records from the Department of Otorhinolaryngology/Audiology of Mayo Clinic in Jacksonville, Florida. Anonymized intake documentation forms and reports were selected from patient records filed between January 2016 and May 2017. Data were extracted from the intake documentation forms and reports and linked to ICF categories using pre-established linking rules. "Overlap," defined as the percentage of ICF CSHL categories represented in the intake documentation, was calculated across document types. In addition, extra non-ICF CSHL categories (ICF categories that are not part of the CSHL) and extra constructs (constructs that are not part of the ICF classification) found in the patient records were described.

RESULTSThe total overlap of multidisciplinary intake documentation with ICF CSHL categories was 100% for the Brief CSHL and 50% for the Comprehensive CSHL. Brief CSHL overlap for discipline-specific documentation fell short at 70% for both AUD and ORL. Important extra non-ICF CSHL categories were identified and included "sleep function" and "motor-related functions and activities," which mostly were reported in relation to tinnitus and vestibular disorders.

CONCLUSIONThe multidisciplinary intake documentation of Mayo Clinic showed 100% overlap with the Brief CSHL, while important areas of nonoverlap were identified in AUD- and ORL-specific reports. The ICF CSHL provides a framework for describing each hearing-impaired individual's unique capabilities and needs in ways currently not documented by audiological and otological evaluations, potentially setting the stage for more effective individualized patient care. Efforts to further validate the ICF CSHL may require the involvement of multidisciplinary institutions with commonly shared electronic health records to adequately capture the breath of the ICF CSHL. This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

Database: Medline


Author(s): Meneses-Barriviera, Caroline Luiz; Bazoni, Jéssica Aparecida; Doi, Marcelo Yugi; Marchiori, Luciana Lozza de Moraes

Source: International archives of otorhinolaryngology; Oct 2018; vol. 22 (no. 4); p. 337-341

Publication Date: Oct 2018

Publication Type(s): Journal Article

PubMedID: 30357071

Available at International Archives of Otorhinolaryngology - from Europe PubMed Central - Open Access

Available at International Archives of Otorhinolaryngology - from Unpaywall

Abstract: Introduction The aging process causes changes in body structure in a continuous manner, and contributes to clinical disorders. Life expectancy is increasing, especially in developing countries. Objective To assess the prevalence of hearing loss and its possible association with hypertension and diabetes mellitus (DM) in the elderly. Methods A cross-sectional study with 519 elderly individuals aged over 60 years who underwent an audiological evaluation (pure tone audiometry), and answered a comorbidity questionnaire that included questions about age, gender, tinnitus and medical history, with data concerning DM. The dependent variable was the presence of hearing loss. The independent variables were age, gender, DM and hypertension. The variables were presented in absolute numbers and proportions, and enabled us to estimate the prevalence. The statistical analysis was performed through multiple logistic regression with 95% confidence intervals and
values of p < 0.05 for the hearing loss and its associated factors. Results A total of 519 subjects of both genders with a median age of 69 years were evaluated, and the individuals who did not attend the audiometric test were excluded from the study, so the final sample was composed of 498 subjects. Sensorineural hearing loss was more prevalent (66.26%) of most frequently with bilateral hearing loss of 91.56% and 26.50% with mild degree. The statistical analysis showed that the variable DM was associated with the high frequency of hearing loss in the elderly, and according to the multiple logistic regression, the risk factors are independent of the hearing loss only for age and exposure to occupational noise. Conclusions There was a statistically significant difference between hearing loss at high frequencies and the risk factors, that is, age and DM.

Database: Medline

21. Hearing Aid Use in Older Adults With Postlingual Sensorineural Hearing Loss: Protocol for a Prospective Cohort Study.

Author(s): Hughes, Matthew E; Nkyekyer, Joanna; Innes-Brown, Hamish; Rossell, Susan L; Sly, David; Bhar, Sunil; Pipingas, Andrew; Hennessy, Alison; Meyer, Denny

Source: JMIR research protocols; Oct 2018; vol. 7 (no. 10); p. e174

Publication Date: Oct 2018

Publication Type(s): Journal Article

PubMedID: 30368434

Abstract: BACKGROUND Older adults with postlingual sensorineural hearing loss (SNHL) exhibit a poor prognosis that not only includes impaired auditory function but also rapid cognitive decline, especially speech-related cognition, in addition to psychosocial dysfunction and an increased risk of dementia. Consistent with this prognosis, individuals with SNHL exhibit global atrophic brain alteration as well as altered neural function and regional brain organization within the cortical substrates that underlie auditory and speech processing. Recent evidence suggests that the use of hearing aids might ameliorate this prognosis. OBJECTIVE The objective was to study the effects of a hearing aid use intervention on neurocognitive and psychosocial functioning in individuals with SNHL aged ≥55 years. METHODS All aspects of this study will be conducted at Swinburne University of Technology (Hawthorn, Victoria, Australia). We will recruit 2 groups (n=30 per group) of individuals with mild to moderate SNHL from both the community and audiology health clinics (Alison Hennessy Audiology, Chelsea Hearing Pty Ltd). These groups will include individuals who have worn a hearing aid for, at least, 12 months or never worn a hearing aid. All participants would be asked to complete, at 2 time points (t) including baseline (t=0) and follow-up (t=6 months), tests of hearing and psychosocial and cognitive function and attend a magnetic resonance imaging (MRI) session. The MRI session will include both structural and functional MRI (sMRI and fMRI) scans, the latter involving the performance of a novel speech processing task. RESULTS This research is funded by the Barbara Dicker Brain Sciences Foundation Grants, the Australian Research Council, Alison Hennessy Audiology, and Chelsea Hearing Pty Ltd under the Industry Transformation Training Centre Scheme (ARC Project #IC140100023). We obtained the ethics approval on November 18, 2017 (Swinburne University Human Research Ethics Committee protocol number SHR Project 2017/266). The recruitment began in December 2017 and will be completed by December 2020. CONCLUSION This is the first study to assess the effect hearing aid use has on neural, cognitive, and psychosocial factors in individuals with SNHL who have never used hearing aids. Furthermore, this study is expected to clarify the relationships among altered brain structure and function, psychosocial factors, and
cognition in response to the hearing aid use.

**TRIAL REGISTRATION**


**Database:** Medline

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**22. Outcomes of Direct-to-Consumer Hearing Devices for People with Hearing Loss: A Review.**

**Author(s):** Tran, Nicole R; Manchaiah, Vinaya

**Source:** Journal of audiology & otology; Oct 2018; vol. 22 (no. 4); p. 178-188

**Publication Date:** Oct 2018

**Publication Type(s):** Journal Article

**PubMedID:** 30126260

**Available at** Journal of audiology & otology - from Europe PubMed Central - Open Access

**Abstract:** As the population of those with mild to moderate hearing loss increases the need remains for amplification solutions. There is a trend to offer alternative amplification options beyond traditional hearing aids. Due to reduced medical risk associated with the most common types of hearing loss (i.e., presbycusis and noise induced), many individuals with such audiological configurations may have success with direct-to-consumer hearing devices (DCHD). The current paper presents a literature review of studies focused on the outcomes of DCHDs for people with hearing loss. Search of electronic databases were used to identify relevant articles for review. Studies on outcomes of DCHDs mainly focused on older adults and reported consistently positive results in clinical and self-reported outcome measures. Improvements in auditory ability, communicative function, social engagement, quality of life, and reduction of self-reported hearing disability were observed. The nature of the direct-to-consumer method makes it challenging to design studies that will accurately represent outcomes for patients due to the extensive dissimilarities in patient journey and device selection options. Accordingly, a majority of the studies conducted on this topic are of low quality of evidence and only provide short-term (i.e., less than one year) outcomes. In addition, results may have been influenced by researcher and/or clinician involvement in choosing the devices and by provision of additional support (i.e., incorporation of a communication partner and communication strategies training). Overall, the literature suggests positive outcomes and self-reported benefit of DCHDs in older adults with hearing loss. However, additional research is needed in this area to verify outcomes.

**Database:** Medline

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**23. Audiological and clinical outcomes of a transcutaneous bone conduction hearing implant: Six-month results from a multicentre study.**

**Author(s):** den Besten, Christine A; Monksfield, Peter; Bosman, Arjan; Skarzynski, Piotr H; Green, Kevin; Runge, Christina; Wigren, Stina; Blechert, Johan I; Flynn, Mark C; Mylanus, Emmanuel A M; Hol, Myrthe K S

**Source:** Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery; Oct 2018

**Publication Date:** Oct 2018
OBJECTIVES: To compare the hearing performance of patients with conductive and mild mixed hearing loss and single-sided sensorineural deafness provided with a new transcutaneous bone conduction hearing implant (the Baha Attract System) with unaided hearing as well as aided with a sound processor on a softband. Furthermore, to evaluate safety and subjective benefit before and after implantation of the test device.

PARTICIPANTS: Fifty-four adult patients in five participating centres were enrolled in this prospective study. Baseline data were collected during a pre-operative visit, and after a softband trial, all patients were implanted unilaterally. Follow-up visits were scheduled at 10 days, 4, 6, 12 weeks and 6 months.

MAIN OUTCOME MEASURES: Free-field hearing thresholds pure-tone average (PTA4 in dB HL; mean threshold at 500, 1000, 2000, 4000 Hz; primary outcome measure). Individual free-field hearing thresholds, speech recognition in quiet and in noise, soft tissue status during follow-up and subjective benefit as measured with the Abbreviated Profile of Hearing Aid Benefit (APHAB), Speech, Spatial and Qualities of Hearing Scale (SSQ) and Health Utilities Index (HUI) questionnaires.

RESULTS: Implantation of the Baha Attract System resulted in favourable audiological outcomes compared to unaided conditions. On the primary outcome parameter, a statistically significant improvement was observed compared to unaided hearing for the patients with conductive/mixed hearing loss (mean PTA4 difference -20.8 dB HL, SD 9.8; P < 0.0001) and for the patients with single-sided sensorineural deafness (SSD) (mean PTA4 difference -21.6 dB HL, SD 12.2; P 0.05). Soft tissue-related issues observed during follow-up included numbness, pain/discomfort at the implant site and to a lesser extent pressure-related skin complications. A declining trend was noted in the rate of these complications during follow-up. Approximately 20% of patients reported some degree of numbness and 38% (slight) pain/discomfort at final follow-up of 6 months. Good results on the subjective benefit questionnaires were observed, with statistically significant improvements on APHAB and SSQ questionnaires, and on the hearing attribute of HUI3.

CONCLUSIONS: The Baha Attract System provided a significant improvement in hearing performance and subjective benefit compared to the pre-operative unaided condition (with the non-test ear blocked). Hearing performance of the Baha Attract was similar to a test situation with the same sound processor on a softband. A proportion of the patients reported numbness and pain/discomfort at the implant site during follow-up, especially during the first post-operative weeks. Based on the results of the current multicentre study, the Baha Attract can be considered as a treatment option for patients with the aforementioned hearing losses. Especially in the SSD patients, a careful selection procedure is warranted. Therefore, a pre-operative trial should be part of the decision-making process before fitting a patient with the Baha Attract System.

Database: Medline
Abstract: South Africa is considered the epicenter of HIV/AIDS with a high rate of TB infection as well. Links have been established between treatments of these conditions to ototoxicity. However, no standardized and systematic ototoxicity monitoring exists within the clinical sites where these conditions are treated; with very minimal and adhoc involvement of audiologists as part of the treatment team. With 3.4 million HIV-infected South Africans being reported to have been on antiretroviral drugs by the end of March 2016; with universal coverage being the target, it is important that ototoxicity monitoring becomes part of the treatment plan. The objective of the current paper is to propose an ototoxicity monitoring protocol that can be implemented within this population to ensure that systematic data are collated in order for evidence-based protocols to be adopted within the South African context. Such a protocol will also allow for early identification and intervention of ototoxic hearing loss within this population. Enough evidence exists to support implementation of standardized protocols that will allow for proper, accurate, efficient, and reliable comparisons of data within and between patients; as well as between and within treatment sites - both locally and internationally. It is hoped that implementation of such a monitoring protocol will also have significant implications for the expanded role of the audiologist in the drug development process; affording evidence-based benefit-risk assessments of drugs in the market for this population.

Database: Medline


Author(s): Wang, Laura A; Smith, P Brian; Laughon, Matthew; Goldberg, Ronald N; Ku, Lawrence C; Zimmerman, Kanecia O; Balevic, Stephen; Clark, Reese H; Benjamin, Daniel K; Greenberg, Rachel G; Best Pharmaceuticals for Children Act – Pediatric Trials Network Steering Committee

Source: Early human development; Oct 2018; vol. 125; p. 26-30

Publication Date: Oct 2018

Publication Type(s): Journal Article

PubMedID: 30193125

Abstract: BACKGROUND At very high doses, furosemide is linked to ototoxicity in adults, but little is known about the risk of hearing loss in premature infants exposed to furosemide. AIMSEvaluate the association between prolonged furosemide exposure and abnormal hearing screening in premature infants. STUDY DESIGN Using propensity scoring, infants with prolonged (≥28 days) exposure to furosemide were matched to infants never exposed. The matched sample was used to estimate the impact of prolonged furosemide exposure on the probability of an abnormal hearing screen prior to hospital discharge. SUBJECTSA cohort of infants 501-1250 g birth weight and 23-29 weeks gestational age discharged home from 210 neonatal intensive care units in the United States (2004-2013). OUTCOME MEASURES We defined abnormal hearing screen as a result of either "fail" or "refer" for either ear. RESULTS Altogether, 1020 infants exposed to furosemide for ≥28 days were matched to 790 unique infants never exposed, yielding a total of 1042 matches due to sampling with replacement and propensity score ties. Matching resulted in a population similar in baseline characteristics. After adjusting for covariates, the proportion of infants with an abnormal hearing screen in the furosemide-exposed group was not significantly higher than the never-exposed group (absolute difference 3.0% [95% CI -0.2-6.2%], P = 0.07). CONCLUSION Prolonged furosemide exposure was associated with a positive, but not statistically significant, difference in abnormal
hearing screening in premature infants. Additional studies with post-hospital discharge audiology follow-up are needed to further evaluate the safety of furosemide in this population.

Database: Medline


Author(s): Ramos Macías, Ángel; Borkosi-Barreiro, Silvia A; Falcón González, Juan C; de Miguel Martínez, Isabel; Ramos de Miguel, Ángel

Source: Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery; Oct 2018

Publication Date: Oct 2018

Publication Type(s): Journal Article

PubMedID: 30354002

Available at Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery - from Wiley

Abstract: OBJECTIVE To determine the audiological and clinical results of cochlear implantation in children below the age of 12 years old with congenital and acquired single-sided deafness. DESIGN Observational, descriptive, transversal study. MAIN OUTCOME MEASURES Speech reception thresholds, Cortical responses, Auditory Lateralization Test and SSQ questionnaire. PARTICIPANTS Children < 12 implanted for congenital or acquired SSD. RESULTS All the children with congenital SSD showed positive cortical responses. Positive results were obtained in the Auditory Lateralization Test for the following modalities: 0º, 45º and 90º. With respect to the Speech Test, the children with acquired SSD showed the following results: 92% and 100% in recognition and 48% and 68% (Azimuth modalities), Signal CI side 52% and 68% and Signal normal hearing side 44% - 60% (p < 0.05). In both group the processor was used for 6-12 hours. With respect to the SSQ questionnaire results, the parents were more satisfied within the post-operative period than within the pre-operative period (P<0.001). CONCLUSION Cochlear implant provides children with congenital SSD with significant audiological and subjective benefits. Children with congenital SSD and implanted after a longer period may not have an important benefit (binaural) although other bilateral effects can be achieved. Children with post-lingual unilateral deafness and after a short period of hearing deprivation probably integrated the normal acoustic hearing with the cochlear implant electrical signal and showed binaural benefits.

Database: Medline


Author(s): Shojaeemend, Hassan; Ayatollahi, Haleh

Source: Healthcare informatics research; Oct 2018; vol. 24 (no. 4); p. 263-275

Publication Date: Oct 2018

Publication Type(s): Journal Article Review

PubMedID: 30443414

Available at Healthcare informatics research - from Europe PubMed Central - Open Access
Abstract: Objectives: Automated audiometry provides an opportunity to do audiometry when there is no direct access to a clinical audiologist. This approach will help to use hearing services and resources efficiently. The purpose of this study was to review studies related to automated audiometry by focusing on the implementation of an audiometer, the use of transducers and evaluation methods.

Methods: This review study was conducted in 2017. The papers related to the design and implementation of automated audiometry were searched in the following databases: Science Direct, Web of Science, PubMed, and Scopus. The time frame for the papers was between January 1, 2010 and August 31, 2017. Initially, 143 papers were found, and after screening, the number of papers was reduced to 16.

Results: The findings showed that the implementation methods were categorized into the use of software (7 papers), hardware (3 papers) and smartphones/tablets (6 papers). The used transducers were a variety of earphones and bone vibrators. Different evaluation methods were used to evaluate the accuracy and the reliability of the diagnoses. However, in most studies, no significant difference was found between automated and traditional audiometry.

Conclusions: It seems that automated audiometry produces the same results compared with traditional audiometry. However, the main advantages of this method; namely, saving costs and increased accessibility to hearing services, can lead to a faster diagnosis of hearing impairment, especially in poor areas.

Database: Medline


Author(s): Kanji, Amisha; Krabbenhoft, Kirsten

Source: The South African journal of communication disorders = Die Suid-Afrikaanse tydskrif vir Kommunikasieafwykings; Oct 2018; vol. 65 (no. 1); p. e1

Publication Date: Oct 2018

Publication Type(s): Journal Article

PubMedID: 30456962

Available at The South African journal of communication disorders = Die Suid-Afrikaanse tydskrif vir Kommunikasieafwykings - from EBSCO (MEDLINE Complete)

Abstract: BACKGROUND Follow-up return rate in Early Hearing Detection and Intervention (EHDI) programmes is of specific importance as it ensures that benchmarks are met and that no child with suspected hearing loss is left unidentified. OBJECTIVES The aim of this study was to determine the factors influencing audiological follow-up of high-risk infants in a risk-based newborn hearing screening programme. METHOD A non-experimental, exploratory, qualitative research design was employed. Purposive sampling was used. The study was conducted at a secondary level hospital in the public health care sector in South Africa. Participants comprised 10 caregivers (age range 26-40 years) of infants who had been enrolled in a risk-based newborn hearing screening programme, and returned for follow-up appointments. Data were collected using semi-structured interviews. Responses were recorded by the researcher and a colleague to ensure rigour and trustworthiness of findings. Data were analysed using thematic analysis for open-ended questions and descriptive statistics for the closed-ended questions. RESULTS The most common positive contributors that facilitated participants’ attendance at follow-up appointments were: having friendly audiologists; a clear line of communication between caregiver and audiologist and a reminder of the appointment. The most significant perceived challenge that participants described in returning for the follow-up appointment was living in far proximity from the hospital. CONCLUSION Findings of the study
revealed that influencing factors on follow-up return rate are demographic, socio-economic, and interpersonal in nature and further suggested the need for an all-inclusive appointment day. It may be of importance to not only look at what is being done to improve the follow-up return rate but also how it should be done in terms of professional-to-patient communication and interactions.

Database: Medline

29. Hearing loss in PHACE syndrome: clinical and radiologic findings.
Author(s): Mamlouk, Mark D; Zimmerman, Bree; Mathes, Erin F; Rosbe, Kristina W
Source: Child's nervous system : ChNS : official journal of the International Society for Pediatric Neurosurgery; Sep 2018; vol. 34 (no. 9); p. 1717-1724
Publication Date: Sep 2018
Publication Type(s): Journal Article
PubMedID: 29748705
Abstract: PURPOSETo characterize the types of hearing loss, auditory-related imaging findings, and hemangioma characteristics in patients with Posterior fossa malformations, Hemangiomas, Arterial anomalies, Cardiac defects, and abnormalities of the Eye (PHACE) syndrome. METHODSRetrospective medical records, audiologic data, and imaging review of all patients presenting to a tertiary care children's hospital with a proven diagnosis of PHACE syndrome from 2005 to 2016. RESULTSTwelve patients were identified with hearing and imaging data. 5/12 had hearing loss, 1 had unilateral severe sensorineural loss with minor conductive component, 1 had unilateral moderate sensorineural loss with minor conductive component, 1 had mild bilateral conductive loss, 1 had bilateral hearing loss (left severe mixed and right severe sensorineural), and 1 had moderate bilateral conductive loss. All patients passed their newborn hearing screening. Of the 5 patients with hearing loss, 3 had IAC hemangiomas (1 bilateral), 3 had enlarged IACs with prominent posterior petrous bones (1 bilateral), 2 had dysgenesis of the cerebellar vermis and hemispheres, there was 1 patient each with a deformed pinna and middle ear and mastoid effusions, and 1 patient had no abnormal auditory-related imaging findings. Patients with hearing loss were more likely to have more areas of cutaneous hemangioma involvement (mean 6.4 vs 3.1, p = .05). Laterality of hearing impairment correlated with the side of cutaneous hemangioma in all patients with hearing loss. Treatment with systemic propranolol did not improve hearing. CONCLUSIONS Patients with PHACE are at risk for hearing loss and may demonstrate radiologic abnormalities within the ear structures, although the type of hearing loss, imaging findings, and their respective correlation vary. While our results are limited by our small sample size, comprehensive audiology evaluations (as opposed to newborn screening testing only) should be considered for PHACE patients who have extensive cutaneous hemangioma or auditory-related imaging abnormalities, such as internal auditory canal hemangiomas.
Database: Medline

Author(s): Silva, Liliane Aparecida Fagundes; Kim, Chong Ae; Matas, Carla Gentile
Source: CoDAS; Sep 2018; vol. 30 (no. 5); p. e20170267
Publication Date: Sep 2018
Publication Type(s): Journal Article Review
**Abstract:**

**PURPOSE:** Identify the characteristics of the clinical audiological evaluation of individuals with Williams syndrome by means of a systematic literature review. **RESEARCH STRATEGIES** The following research question was initially determined: "What are the characteristics of clinical auditory assessment in individuals with Williams syndrome?". From this, a bibliographic search was conducted in four databases using the descriptors: Williams syndrome, Hearing loss, and Audiology. **SELECTION CRITERIA** Only full articles with evidence levels 1 or 2, published in Brazilian Portuguese or English, were selected. **DATA ANALYSIS** Results obtained in the auditory tests used in the clinical routine, namely: immittance test, pure-tone audiometry, otoacoustic emissions, and brainstem auditory evoked potential were analyzed. **RESULTS** Two hundred nine studies were found, but only 12 met the inclusion criteria for the study. It was possible to observe prevalence of type A tympanometry curve, which may occur with absence of acoustic reflexes, mild to moderate sensorineural hearing loss, affecting mainly the high frequencies, absent or less amplified otoacoustic emissions, and brainstem auditory evoked potential without retrocochlear alteration. **CONCLUSION** Cochlear impairment is common in individuals with Williams syndrome and the main disorders found in the hearing assessment in this population are absence of otoacoustic emissions and acoustic reflexes, as well as presence of mild to moderate sensorineural hearing loss, mainly in the high-frequency range, observed by audiometry.

**Database:** Medline

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31. **Hearing loss.**

**Author(s):** Lee, Jennifer W; Bance, Manohar L

**Source:** Practical neurology; Sep 2018

**Publication Date:** Sep 2018

**Publication Type(s):** Journal Article

**PubMedID:** 30185631

Available at [Practical neurology](https://www.practicalneurology.com) - from BMJ

**Abstract:** Hearing loss affects one in six people in the UK and is a significant disease burden. In addition to communication problems, there is also an association with depression and dementia. Clinical assessment with targeted history and examination can identify the characteristics and cause of hearing loss, and complementary audiological testing can confirm its type and severity. Retrocochlear screening is recommended for sudden, rapidly progressive or asymmetric sensorineural hearing loss. Medical or surgical therapies may be indicated in cases of conductive hearing loss, while hearing assistive devices and hearing aids are the mainstay of rehabilitation for sensorineural hearing loss.

**Database:** Medline

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32. **Parent-directed commentaries during children’s hearing habilitation appointments: a practice in family-centred care.**

**Author(s):** Ekberg, Katie; Scarinci, Nerina; Hickson, Louise; Meyer, Carly
BACKGROUND: Family-centred care (FCC) is recognized as best practice in the delivery of early intervention services for children with hearing loss (HL) and their families. However, there has been little research involving direct observation of family-centred communication practices in paediatric hearing habilitation appointments, which means little is currently known about how family members are involved within appointments, and how FCC is accomplished by health professionals through their interactions with families. AIM: To examine the interaction between hearing healthcare professionals, children with HL, and their parents within video-recorded paediatric hearing habilitation appointments (including both audiology and speech and language therapy appointments), with a particular focus on how parents were involved in the interaction. METHODS & PROCEDURE: The data for this study involved a corpus of 48 video-recorded paediatric hearing habilitation appointments from three clinical sites (including 33 audiology appointments and 15 speech pathology appointments). Participants included 14 audiologists, 8 speech and language therapists, 41 children with HL (aged 18 months and over) and 48 of their attending family members (e.g., parents/carers). The data were analyzed using conversation analysis. OUTCOMES & RESULTS: Analysis revealed one specific practice that health professionals used to engage parents in the interaction during child-directed assessment and therapy tasks: that of ‘parent-directed commentaries’, where health professionals shifted their attention to the parent(s) to describe or evaluate what they were observing during appointment tasks. Health professionals were observed to produce two types of parent-directed commentaries: (1) a positive evaluation of the child’s just-prior response; and (2) an account for the child’s prior behaviour (sometimes also accompanied by a positive evaluation). These commentaries appeared at systematic points in the interaction when the child had been displaying difficulty with their response to the health professional. The parent-directed commentaries accomplished several important functions: they engaged the parent’s attention in the interaction; focused the parent’s attention on positive responses from the child (while shrouding less positive responses); played down potential negative perceptions of the child’s previous missed/incorrect responses; and provided parents with reassurance of their child’s progress during the ongoing task. CONCLUSIONS & IMPLICATIONS: The parent-directed commentaries identified in this study provide an example of the practical, interactional resources that health professionals can draw on within paediatric appointments to facilitate FCC with parents.

Database: Medline

33. Monitoring neonates for ototoxicity.

Author(s): Garinis, Angela C; Kemph, Alison; Tharpe, Anne Marie; Weitkamp, Joern-Hendrik; McEvoy, Cynthia; Steyger, Peter S

Source: International journal of audiology; Sep 2018; vol. 57 ; p. S41

Publication Date: Sep 2018

Publication Type(s): Journal Article
OBJECTIVES Neonates admitted to the neonatal intensive care unit (NICU) are at greater risk of permanent hearing loss compared to infants in well mother and baby units. Several factors have been associated with this increased prevalence of hearing loss, including congenital infections (e.g. cytomegalovirus or syphilis), ototoxic drugs (such as aminoglycoside or glycopeptide antibiotics), low birth weight, hypoxia and length of stay. The aetiology of this increased prevalence of hearing loss remains poorly understood.

DESIGN Here we review current practice and discuss the feasibility of designing improved ototoxicity screening and monitoring protocols to better identify acquired, drug-induced hearing loss in NICU neonates.

STUDY SAMPLE A review of published literature.

CONCLUSIONS We conclude that current audiological screening or monitoring protocols for neonates are not designed to adequately detect early onset of ototoxicity. This paper offers a detailed review of evidence-based research, and offers recommendations for developing and implementing an ototoxicity monitoring protocol for young infants, before and after discharge from the hospital.

Database: Medline

34. Sudden Sensorineural Hearing Loss in Children: A Report of 75 Cases.

Author(s): Qian, Yi; Zhong, Shixun; Hu, Guohua; Kang, Houyong; Wang, Ling; Lei, Yan

Source: Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology; Sep 2018; vol. 39 (no. 8); p. 1018-1024

Publication Date: Sep 2018

Publication Type(s): Journal Article

PubMedID: 30063499

Abstract: To investigate the characteristics, treatment, and prognostic factors of sudden sensorineural hearing loss (SSNHL) in children. METHODS Seventy-five cases (78 ears) of SSNHL in children from February 2011 to June 2016 were retrospectively analyzed. We scrutinized the clinical manifestations, audiological assessments, and serologic examinations of these pediatric cases by univariate and multivariate logistic analysis methods. The patients were divided into four groups according to their audiometric curve type: ascending, descending, flat, and profound. RESULTS Of the 75 patients (78 ears), 25 patients were in the ascending group (32.00%), 9 patients were in the descending group (12.00%), 17 patients were in the flat group (22.67%), and 24 patients were in the profound group (32.32%). The overall recovery rates (complete + partial + slight) of the different groups were as follows: ascending group, 96.00%; flat group, 76.47%; profound group, 50.00%; and descending group, 44.44%. The overall recovery rate of all patients was 70.67%. The multivariate logistic analysis showed that the type of audiometric curve and the interval from onset to intervention were two independent risk factors that correlated with the prognosis of SSNHL in children. Some children had positive cytomegaloviruses, rubella virus, and herpes simplex virus immunoglobulin G antibodies. Twenty-one children were treated with additional intratympanic methylprednisolone as salvage therapy and 13 of these children showed improved (complete + partial + slight) recoveries. Three children had postauricular compound betamethasone injections, but none of them showed improvement. One of three children recovered slightly after treatment with intratympanic methylprednisolone combined with postauricular betamethasone injection. CONCLUSION The prognosis of SSNHL in children is closely related to the type of
audiometric curve and the onset of treatment. Intratympanic methylprednisolone and compound betamethasone injected postauricularly could be effective for SSNHL in children.

Database: Medline

35. Assessing the Benefit-Risk Profile for Pediatric Implantable Auditory Prostheses.

Author(s): Fisher, Laurel M; Martinez, Amy S; Richmond, Frances J; Krieger, Mark D; Wilkinson, Eric P; Eisenberg, Laurie S

Source: Therapeutic innovation & regulatory science; Sep 2018; vol. 52 (no. 5); p. 669-679

Publication Date: Sep 2018

Publication Type(s): Journal Article

PubMedID: 29714549

Available at Therapeutic Innovation & Regulatory Science - from ProQuest (Hospital Premium Collection) - NHS Version

Abstract: BACKGROUND/AIMS Children with congenital cochleovestibular abnormalities associated with profound hearing loss have few treatment options if cochlear implantation does not yield benefit. An alternative is the auditory brainstem implant (ABI). Regulatory authority device approvals currently include a structured benefit-risk assessment. Such an assessment, for regulatory purposes or to guide clinical decision making, has not been published, to our knowledge, for the ABI and may lead to the design of a research program that incorporates regulatory authority, family, and professional input. METHODS Much structured benefit-risk research has been conducted in the context of drug trials; here we apply this approach to device studies. A qualitative framework organized benefit (speech recognition, parent self-report measures) and risk (surgery- and device-related) information to guide the selection of candidates thought to have potential benefit from ABI. RESULTS Children with cochleovestibular anatomical abnormalities are challenging for appropriate assessment of candidacy for a cochlear implant or an ABI. While the research is still preliminary, children with an ABI appear to slowly obtain benefit over time. A team of professionals, including audiological, occupational, and educational therapy, affords maximum opportunity for benefit. CONCLUSIONS Pediatric patients who have abnormal anatomy and are candidates for an implantable auditory prosthetic require an individualized, multisystems review. The qualitative benefit-risk assessment used here to characterize the condition, the medical need, potential benefits, risks, and risk management strategies has revealed the complex factors involved. After implantation, continued team support for the family during extensive postimplant therapy is needed to develop maximum auditory skill benefit.

Database: Medline

36. Clinical trials, ototoxicity grading scales and the audiologist's role in therapeutic decision making.

Author(s): King, Kelly A; Brewer, Carmen C

Source: International journal of audiology; Sep 2018; vol. 57 ; p. S89

Publication Date: Sep 2018

Publication Type(s): Journal Article

PubMedID: 29276851
Abstract: OBJECTIVES Define clinical trials and adverse event (AE) monitoring from the perspective of the audiologist. Rationalise the importance of audiology’s involvement before, during and after monitoring. Identify strengths and weaknesses in toxicity grading scales, and discuss factors that may influence these. DESIGN Literature involving commonly cited grading scales used to capture ototoxicity is reviewed. Current regulations and language associated with clinical trial implementation and AE monitoring are described. Personal observations based on a variety of clinical populations are drawn from years of experience developing and employing ototoxicity monitoring protocols in a complex medical setting. RESULTS Six commonly used grading scales for ototoxicity are systematically reviewed for strengths and weaknesses. Necessary considerations that inform selection of grading scales are presented. A review of and historical context for clinical trial development and AE monitoring is provided. CONCLUSION The audiologist’s role in therapeutic decision making goes beyond collection of the audiogram. Clear communication to stakeholders in ototoxicity monitoring is paramount, and toxicity grading scales are one tool to facilitate this exchange. Various factors should be considered in advance of selecting the most appropriate scale to capture hearing loss, and no scale is without limitation.

Database: Medline

37. Audiological Alterations in Patients With Cleft Palate.

Author(s): Rivelli, Ramiro Adrian; Casadio, Vanesa; Bennun, Ricardo D

Source: The Journal of craniofacial surgery; Sep 2018; vol. 29 (no. 6); p. 1486-1489

Publication Date: Sep 2018

Publication Type(s): Journal Article

PubMedID: 30028407

Abstract: INTRODUCTION Chronic otitis media with effusion (OME) is a recurrent complication, usually found in cleft palate patients. Conductive hearing loss is the result of the Eustachian tube dysfunction caused by the absence of fusion and the altered insertion of the muscles of the secondary palate. It is also the consequence of an ineffective muscular reconstruction after primary cleft palate repair. METHODOLOGY This is a cohort study to compare 4 groups of patients born with isolated cleft lip (ICL), unilateral cleft lip/palate (UCLP), bilateral cleft lip/palate (BCLP), and isolated cleft palate (ICP), received in our hospital between June 2015 to September 2017, operated by the same surgeon, using the same surgical technique and protocol. Complete cleft palate repair was performed, in average, at 10 months, and placement of ventilation tubes, if necessary, was made in the same operatory act. After palate repair, primary or secondary hearing loss was checked, joint to the connection with the type of used ventilation tubes, recurrences and complications also were considered. RESULTS The study sample was integrated by 69 patients, 2 of 11 patients with ICL (18.18%), 30 of 34 patients with UCLP (88.23%), 17 of 19 patients with BCLP (89.47%), and 4 of 5 patients with ICP (80.00%) were diagnosed with OME requiring ventilation tubes at the time of surgery. It can be established that the average hearing loss in patients with diabolos in the postoperative period is 19.4 db and in those patients with T tubes it is 14.2 db, the difference being statistically significant (P < 0.05). CONCLUSION Hearing improvement prior to language acquisition is essential for a proper speech development. Early trans tympanic tubes implantation during cleft palate repair contributes to a correct short-term ventilation of the middle ear, being the T tubes the best option.

Database: Medline
38. Children with GJB2 gene mutations have various audiological phenotypes.

**Author(s):** Wang, Xianlei; Huang, Lihui; Zhao, Xuelei; Wang, Xueyao; Cheng, Xiaohua; Du, Yating; Liu, Dongxin

**Source:** Bioscience trends; Aug 2018

**Publication Date:** Aug 2018

**Publication Type(s):** Journal Article

**PubMedID:** 30146550

Abstract: The current study retrospectively investigated variations in audiological phenotypes in children with GJB2 gene mutations. Subjects were 128 infants and young children who were seen as outpatients by Otology at Beijing Tongren Hospital from 2012 to 2018. Of the 128 subjects, 99 had biallelic truncating (T/T) mutations and 29 had truncating/nontruncating (T/NT) mutations. Genotypes, results of universal newborn hearing screening (UNHS), and the degree and symmetry of hearing loss were examined in the two groups. Twenty-two subjects (20.37%, 22/128) passed UNHS, including 13 children with T/T mutations and 9 with T/NT mutations. Of the 128 subjects, 22 had normal hearing, 2 had unilateral hearing loss, and 115 had bilateral hearing loss. Severe-to-profound hearing loss was the most prevalent phenotype in children with T/T mutations (73.23%), while normal hearing was prevalent in children with T/NT mutations (41.38%). Symmetrical hearing loss was the main phenotype in both groups, and the number of subjects with symmetrical hearing loss did not differ significantly between the two groups. Therefore, children with GJB2 gene mutations have phenotypic variability in terms of their results of UNHS and their degree and symmetry of hearing loss. Subjects with T/NT mutations of the GJB2 gene were more likely to pass UNHS and had milder hearing loss compared to those with T/T mutations. Symmetrical hearing loss was the main phenotype in the two groups, but 36.53% of children had bilateral asymmetric hearing loss. Parents of all subjects with sensorineural hearing loss were informed that their children may have a GJB2 mutation.

**Database:** Medline


**Author(s):** Vincenti, Vincenzo; Di Lella, Filippo; Falcioni, Maurizio; Negri, Maurizio; Zanetti, Diego

**Source:** European archives of oto-rhino-laryngology : official journal of the European Federation of Oto-Rhino-Laryngological Societies (EUFOS) : affiliated with the German Society for Oto-Rhino-Laryngology - Head and Neck Surgery; Aug 2018; vol. 275 (no. 8); p. 1987-1993

**Publication Date:** Aug 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29971494

Abstract: OBJECTIVE To report neuroradiologic findings, surgical strategies and clinical and audiological results in a series of children with CHARGE syndrome (CS) who had been evaluated for cochlear implantation (CI). STUDY DESIGN Retrospective case series. SETTING Tertiary referral university hospital. PATIENTS Eight profoundly deafened children with CS were included. Routine audiometric measurements, speech perception categories and speech intelligibility ratings were performed pre- and post-operatively. Neuroradiological and intraoperative findings, surgical planning, and post-operative complications were analyzed. RESULTS Six children were profoundly deafened by virtue of CHARGE syndrome. The results of audiometric testing were consistent with profound bilateral sensorineural loss. Bilateral hearing loss was found in six children and unilateral hearing loss in two children. The mean age at implantation was 3.8 years (range 1.3 to 7.8 years). The mean follow-up period was 1.5 years (range 0.5 to 3 years). All children benefited from the implantation. No surgical complications were observed. CONCLUSION Cochlear implantation is an effective treatment for children with CHARGE syndrome that provides significant benefit.
deaf from birth and 2 had progressive hearing loss to profound levels. Cochlear nerve deficiency (CND) was noted in 5 out of the 6 patients with congenital sensorineural hearing loss (SNHL). Seven children underwent CI. Surgery was performed using standard transmastoid facial recess approach in 3 ears, subtotal petrosectomy in 3, and transmastoid single-slit labyrinhotomy in one. Temporary facial palsy occurred in one patient. In the group of patients with congenital SNHL, 2 children benefitted from CI and developed spoken language; the remaining 3 children obtained improved access to environmental sounds and used signs and gestures as their main mode of communication. The two patients with progressive SNHL had preoperative verbal language and continued to use verbal language after CI.

**CONCLUSIONS**

The constant presence of temporal bone anomalies in children with CS requires surgical expertise in performing non-standard approaches for safe and effective CI. Patients with progressive SNHL and normal cochlear nerves had satisfactory results with CI. Limited benefits have been observed in presence of CND.

**Database:** Medline

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40. **Does the diameter of the stapes prosthesis really matter? A prospective clinical study.**

**Author(s):** Bernardeschi, Daniele; De Seta, Daniele; Canu, Giuseppina; Russo, Francesca Yoshie; Ferrary, Evelyne; Lahlou, Ghizlene; Sterkers, Olivier

**Source:** The Laryngoscope; Aug 2018; vol. 128 (no. 8); p. 1922-1926

**Publication Date:** Aug 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29171673

**Available at:** The Laryngoscope - from Wiley

**Abstract:** OBJECTIVES/HYPOTHESTITo evaluate the influence of the diameter of stapes prosthesis on functional outcomes in stapes surgery.

**STUDY DESIGN** Prospective cohort study.

**METHODS** Fifty consecutive small fenestra stapedotomies performed using a 0.4-mm-diameter prosthesis were compared with 50 consecutive small fenestra stapedotomies carried out using a 0.6-mm-diameter piston. Audiological assessment following the recommendations of the Committee on Hearing and Equilibrium was performed 1 month after surgery. Postoperative complications between the two groups were noted.

**RESULTS** There were no statistically significant differences in demographic data between the two groups, and no differences in preoperative bone-conduction (BC) or air-conduction (AC) hearing thresholds for all frequencies (analysis of variance [ANOVA] and χ2 tests). No differences were found in the mean preoperative BC and AC pure-tone average and air-bone gap (ABG). In the postoperative evaluation, a statistically significant difference was found for the mean AC gain (20 ± 8.7 vs. 24 ± 11.5, P = .042, ANOVA) as well as for the postoperative AC threshold at 0.125 and 0.25 kHz and the postoperative BC threshold at 0.25 kHz (P < .01, ANOVA). A postoperative ABG ≤10 dB was obtained in 90% and 94% of patients in the 0.4-mm- and 0.6-mm-diameter piston groups, respectively (difference not significant, χ2 test). No postoperative dead ear and/or sensorineural hearing loss was noted in either group.

**CONCLUSION** The 0.6-mm piston allowed a statistically significant higher AC gain compared with the 0.4-mm diameter piston. A larger diameter piston may be preferable if there are no anatomical or technical reasons that would favor a smaller prosthesis.


**Database:** Medline
41. Applicability of the real ear measurement for audiological intervention of tinnitus.

**Author(s):** Rocha, Andressa Vital; Mondelli, Maria Fernanda Capoani Garcia

**Source:** Brazilian journal of otorhinolaryngology; Aug 2018

**Publication Date:** Aug 2018

**Publication Type(s):** Journal Article

**PubMedID:** 30337103

**Abstract:**

**INTRODUCTION**

Tinnitus is present in a large part of chronic health complaints, and it is considered a public health problem injurious to the individual’s quality of life. Considering the increase of the world population associated with an increase of life expectancy, tinnitus remains a cause for medical concern, since during aging the occurrence of auditory impairments due to the deterioration of the peripheral auditory structures and central impairs the quality of life.

**OBJECTIVE**

The aim of the present study was to analyze the applicability of real ear measurements for audiological intervention of tinnitus through specific evaluation, selection, verification and validation of the hearing aids combined with the sound generator.

**METHODS**

Forty individuals of both genders with hearing loss and tinnitus complaints were deemed eligible to compose the sample. They were enrolled according to clinical symptoms and submitted to the following procedures: anamnesis and previous complaint history, high frequency audiometry, immittanciometry and acuphenometry with the research of psychoacoustic thresholds of pitch, loudness and minimum masking threshold, sound generator, in addition to the application of the Tinnitus Handicap Inventory and Visual Analog Scale tools. The entire sample was adapted with Siemens hearing aids and a sound generator, participated in a counseling session with support of digital material and evaluated in two situations: Initial Assessment (before the hearing aids and sound generator adaptation) and Final Assessment (6 months, after adaptation). The statistical analyzes were descriptive and inferential, adopted a significance level of 5% and the T-Paired Test and the Spearman Correlation test were performed.

**RESULTS**

The results showed that there was a benefit with the use of hearing aids combined with a sound generator from the statistically significant values and strong correlations between the sound generator verification data regarding acuphenometry and the nuisance/severity questionnaires. Regarding the verification of the sound generator, it is important to highlight that the entire sample selected the effective acoustic stimulation based on the comfort levels, which was proved in the present study to be a sufficient intensity for positive prognosis, whereas the users’ noises were found below the psychoacoustic thresholds of acuphenometry.

**CONCLUSION**

The present study concluded that the audiological intervention with any level of sound stimulus is enough to obtain a positive prognosis in the medium term. Data that specifies that the verification of sound generator was effective at the real ear measurements are important in the evaluation and intervention of the complaint. In addition, it points out that the greater the tinnitus perception, the greater its severity, and the greater the nuisance, the higher the psychoacoustics thresholds of frequency and the minimum threshold of masking.

**Database:** Medline

42. Concurrent Hearing, Genetic, and Cytomegalovirus Screening in Newborns, Taiwan.

**Author(s):** Lu, Chun-Yi; Tsao, Po-Nien; Ke, Ying-Ying; Lin, Yi-Hsin; Lin, Yin-Hung; Hung, Chia-Cheng; Su, Yi-Ning; Hsu, Wei-Chung; Hsieh, Wu-Shiun; Huang, Li-Min; Wu, Chen-Chi; Hsu, Chuan-Jen

**Source:** The Journal of pediatrics; Aug 2018; vol. 199; p. 144
OBJECTIVE

To evaluate the feasibility and potential benefits of incorporating genetic and cytomegalovirus (CMV) screenings into the current newborn hearing screening (NHS) programs.

STUDY DESIGN

Newborns were recruited prospectively from a tertiary hospital and a maternity clinic between May 2016 and December 2016 and were subjected to hearing screening, CMV screening, and genetic screening for 4 common mutations in deafness genes (p.V37I and c.235delC of GJB2 gene, c.919-2A>G of SLC26A4 gene, and the mitochondrial m.1555A>G). Infants with homozygous nuclear mutations or homoplasmic/heteroplasmic mitochondrial mutation (referred to as "conclusively positive genotypes") and those who tested positive for CMV received diagnostic audiologic evaluations.

RESULTS

Of the total 1716 newborns enrolled, we identified 20 (1.2%) newborns with conclusively positive genotypes on genetic screening, comprising 15 newborns (0.9%) with GJB2 p.V37I/p.V37I and 5 newborns (0.3%) with m.1555A>G. Three (0.2%) newborns tested positive on CMV screening. Twelve of the 20 newborns (60%) with conclusively positive genotypes and all 3 newborns who tested positive for CMV (100%) passed NHS at birth. Diagnostic audiologic evaluations conducted at 3 months confirmed hearing impairment in 6 of the 20 infants (30%) with conclusively positive genotypes.

CONCLUSION

This study confirms the feasibility of performing hearing, genetic, and CMV screenings concurrently in newborns and provides evidence that the incorporation of these screening tests could potentially identify an additional subgroup of infants with impaired hearing that might not be detected by the NHS programs.

Database: Medline

43. [Analysis of clinical audiology and etiology in 72 twins aged 0-4 years].

Author(s): Zhao, X L; Huang, L H; Wang, X L

Source: Lin chuang er bi yan tou jing wai ke za zhi = Journal of clinical otorhinolaryngology, head, and neck surgery; Jul 2018; vol. 32 (no. 13); p. 979-983

Publication Date: Jul 2018

Publication Type(s): English Abstract Journal Article

PubMedID: 29986558

Abstract: Objective: To investigate the clinical audiological characteristics of twins and analyze the risk factors for hearing loss. Method: The subjects were 72 cases, selected from our hospital otological outpatient of 0 to 4 years old twins. All subjects underwent universal newborn hearing screening and had definite results. At the same time, acoustic immittance, auditory brainstem response, auditory steady-state response, pediatric behavior audiometry and other audiological tests were carried out. Subjects were divided into two groups according to whether with high risk factors for hearing loss: 42 patients (58.33%) in group A (risk factor group) and 30 patients (41.67%) in group B (no risk factor group). The results of universal newborn hearing screening (UNHS), hearing diagnosis, degree of hearing loss, type of hearing curve and risk factors categories of hearing loss were analyzed for both groups of subjects. Result: In 72 cases, 41 were males and 31 were females. Thirty-one were the first born and 41 were the second born. Age distribution of first visit: 3 to 40 months, median age: 4-6 months. Forty-seven (65.27%) failed in the UNHS. The failing rate was higher in group A (76.19%) than in group B (50.00%). Fifty (69.44%) were diagnosed with hearing loss. 78.57% of hearing loss was diagnosed in group A, which was higher than that in group B (56.67%). The degree
of hearing loss in group A was mainly profound (43.55%) and group B was moderate (48.00%). The differences above all was statistically significant. For the hearing curve type, group A (35.48%) and group B (40.00%) were both mainly flat-type, the difference was not statistically significant. In 72 cases, there were 42 cases (58.33%) with risk factors for hearing loss, of which 38.1% had two or more kinds of risk factors and 61.9% had one kind of risk factor. Hyperbilirubinemia was the major risk factor (34.92%). Conclusion: 69.44% of twins had a confirmed hearing loss. Those with risk factors had higher failing rate of UNHS and more serious hearing loss. 58.33% of twins had risk factors for hearing loss, and individuals with two or more kinds of risk factors were much more. Hyperbilirubinemia takes the first place and should be paid enough attention by clinicians.

Database: Medline

44. Vestibular Manifestations in Subjects With Enlarged Vestibular Aqueduct.

Author(s): Song, Jae-Jin; Hong, Sung Kwang; Lee, Sang Yeon; Park, Sung Joon; Kang, Seong Il; An, Yong-Hwi; Jang, Jeong Hun; Kim, Ji Soo; Koo, Ja-Won

Source: Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology; Jul 2018; vol. 39 (no. 6); p. e461

Publication Date: Jul 2018

Publication Type(s): Journal Article

PubMedID: 29664869

Abstract: OBJECTIVE To describe the results of a thorough evaluation in a large series of patients with an enlarged vestibular aqueduct (EVA), focusing on vestibular manifestations with etiological considerations. STUDY DESIGN Retropective chart review of patients with EVA. SETTING Tertiary referral center. PATIENTS A total of 22 EVA patients with a median age of 8 years (6 mo-35 yr) who underwent both audiovestibular and radiologic examinations. MAIN OUTCOME MEASURES Patient demographics, radiologic findings, audiologic results, vestibular symptoms, findings of neurotologic examinations, and laboratory evaluations were collected and analyzed. Standard descriptive statistics were used to summarize patient characteristics. Subjects who had a history of vertigo attack were categorized as "vestibulopathy group," while subjects without any history of vertigo as "non-vestibulopathy group." RESULTS Of the 41 ears included, 37 (90.2%) had hearing loss on initial audiometric evaluations. Among the 22 patients, 14 (63.6%) complained of dizziness. Of the 14 vertiginous patients, seven had recurrent episodes, five had a history of single attack, and two presented with postural imbalances. There were no significant differences between vestibulopathy and non-vestibulopathy groups with regard to the relationship between the development of vestibular symptoms and aqueductal size, hearing threshold, or age at first visit. Four of the 22 (18.2%) patients developed secondary benign paroxysmal positional vertigo (BPPV) and all patients complained of simultaneous decreases in hearing. CONCLUSIONS Our results demonstrate that patients may develop vestibular symptoms during their clinical course, and all patients with an enlarged vestibular aqueduct should be cautioned regarding the potential development of vestibular pathology. Moreover, the non-negligible incidence of secondary BPPV mandates positional tests when evaluating EVA patients with vertigo.

Database: Medline
45. Rare case of bilateral aural atresia and cochlear dysplasia: when cochlear implantation is not the answer.

**Author(s):** Svrakic, Maja

**Source:** Cochlear implants international; Jul 2018; vol. 19 (no. 4); p. 234-238

**Publication Date:** Jul 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29455623

**Abstract:**

**OBJECTIVE AND IMPORTANCE**

Reports of patients with concurrent middle and inner ear anomalies are rare. These patients present a surgical challenge for cochlear implantation. The surgical risk must be weighed against the predicted benefit of the patient’s hearing outcome and subsequent development of speech and language as well as their quality of life.

**CLINICAL PRESENTATION**

Thirteen-year-old boy presented to the Otology clinic for auditory rehabilitation options. He has mild developmental delay, is non-verbal and communicates via American Sign Language. He was born with bilateral aural atresia and never wore amplification. On exam he has grade 1 microtia and complete ear canal atresia bilaterally. His behavioural hearing test shows profound sensorineural hearing loss of both ears. The computed tomography scan shows bilateral underdeveloped and completely opacified mastoid and middle ear, complete bony atresia of the ear canals, and an under-partitioned cochlea with poorly defined modiolus, among other abnormalities.

The patient and his family were counselled on the available options as well as the need for any further studies.

**INTERVENTION**

Counselling of patient and family.

**CONCLUSION**

While there have been reports in the literature of performing cochlear implantations in patients with a concurrent atresia and cochlear dysplasia, these were patients whose degree of inner ear anomalies was relatively minor and their prognosis of a good audiological outcome was favourable. The presented case is that of a patient for whom the surgical approach to the cochlea alone would be difficult. More importantly, his quality of life would not significantly improve in light of the predicted limited hearing and language development outcomes, given the severity of his inner ear abnormalities, limited communication abilities, prolonged period of deafness and developmental delays.

**Database:** Medline

46. Audiology Students' Perspectives of Enacting and Learning Clinical Communication: A Qualitative Interview and Video Reflexivity Study.

**Author(s):** Tai, Samantha; Woodward-Kron, Robyn; Barr, Caitlin

**Source:** American journal of audiology; Jun 2018; vol. 27 (no. 2); p. 219-230

**Publication Date:** Jun 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29587300

Available at **American journal of audiology** - from EBSCO (CINAHL Plus with Full Text)

Available at **American journal of audiology** - from ProQuest (Hospital Premium Collection) - NHS Version

Available at **American journal of audiology** - from EBSCO (MEDLINE Complete)

Available at **American journal of audiology** - from EBSCO (Biomedical Reference Collection - Comprehensive)
Abstract: Purpose: Effective clinical communication is pivotal to the provision of quality hearing health care. To date, audiology students reportedly felt ill-prepared when counseling patients about their hearing impairment, yet there is a paucity of studies exploring how clinical communication is taught and learned in audiology programs. Thus, the aims of the study were (a) to explore final year audiology students' perspectives of their own clinical communication skills during an in-house university clinical placement and (b) to explore students' perceptions of their clinical communication education. Method: Using a qualitative description approach, students were asked to coview their filmed clinical encounter using video reflexivity during a semistructured interview on clinical communication education. Fifteen final year graduate audiology students from The University of Melbourne, Australia, participated in the study. The interviews were audio-recorded and analyzed thematically. Results: The overarching themes of striving to be patient-centered, assessment shapes behavior, and power relations emerged from students' reflection of their own clinical encounter. In addition, the theme what students want described the perceived teaching methods that assisted students' clinical communication practices. Conclusions: The findings of this study highlight the challenges that students perceived during their clinical placement as they strive to enact a patient-centered interaction. An assessment rubric that incorporates communication skills can provide greater opportunities for feedback and self-reflection. Additionally, clinical communication education that adopts experiential learning and is longitudinally integrated into the curriculum can further reinforce students' communication learning needs.

Database: Medline

47. Sudden sensorineural hearing loss in children and adolescents: Clinical characteristics and age-related prognosis.

Author(s): Kim, Jin Youp; Han, Jae Joon; Sunwoo, Woong Sang; Koo, Ja-Won; Oh, Seung-Ha; Park, Min-Hyun; Kim, Young Ho

Source: Auris, nasus, larynx; Jun 2018; vol. 45 (no. 3); p. 447-455

Publication Date: Jun 2018

Publication Type(s): Journal Article

PubMedID: 28888426

Abstract: OBJECTIVE: Although many studies have investigated sudden sensorineural hearing loss (SSNHL) in adults, there were few studies on SSNHL in the pediatric population; especially research on treatment and prognosis of pediatric SSNHL was limited. The aim of this study was to evaluate clinical characteristics, treatment outcomes and prognostic factors in children and adolescents with SSNHL. METHOD: A retrospective review of medical records of 67 pediatric patients (67 ears) who had diagnosed with SSNHL at our hospitals was performed to analyze patients' clinical manifestations and audiograms. All patients were treated with high-dose systemic prednisolone (1mg/kg), and 17 of them underwent intratympanic steroid injection therapy. Audiological evaluation was carried out before and after treatment, and hearing recovery was defined as complete recovery and partial recovery according to Siegel's criteria. Patients were divided into two groups: childhood group (ages between 4 and 12 years old) and adolescence group (age>12 years), and clinical characteristics and treatment outcomes were investigated. In addition, patients were divided into two groups according to degree of hearing recovery, and evaluation was made regarding possible prognostic factors. RESULTS: The recovery rate in total 67 patients was 55.2%. The recovery rate of the childhood group was significantly lower than that of the adolescence group (p=0.038). While the presence of vertigo did not significantly correlate with prognosis (p=0.219), the
presence of tinnitus was significantly associated with hearing recovery (p=0.005). Audiological assessment revealed that a low initial hearing threshold, high speech discrimination score, and descending type of audiogram were positively associated with hearing recovery (p=0.002, p=0.003, and p=0.029, respectively). CONCLUSION The childhood group had worse treatment outcomes than the adolescence group. High initial hearing threshold and absence of tinnitus were poor prognostic factors of hearing recovery. Active treatment is required for patients with these poor prognostic factors and childhood patients with SSNHL.

Database: Medline

Author(s): Rodenburg-Vlot, Marian B A; Ruytjens, Liesbet; Oostenbrink, Rianne; van der Schroeff, Marc P
Source: Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology; Jun 2018; vol. 39 (no. 5); p. e301
Publication Date: Jun 2018
Publication Type(s): Journal Article
PubMedID: 29659414
Available at Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology - from Unpaywall
Abstract: OBJECTIVESensorineural hearing loss is a common sequela of bacterial meningitis. The objective of this study is to delineate the incidence and course of hearing loss after bacterial meningitis. STUDY DESIGN Retrospective cohort study. SETTING Tertiary referral center. PATIENTS Data of 655 patients who suffered from bacterial meningitis between 1985 and 2015 were analyzed. INTERVENTIONS None. MAIN OUTCOME MEASUREMENTS Availability of audiometric data, incidence of hearing loss, and onset and course of hearing loss. RESULTS In this cohort the incidence of hearing loss (>25 dB) was 28% (95% confidence interval 23-34%). The incidence of profound hearing loss (>80 dB) was 13% (95% confidence interval 10-18%). Normal hearing at the first assessment after treatment for meningitis remained stable over time in all these patients. In 19 of the 28 patients with diagnosed hearing loss, the hearing level remained stable over time. Hearing improved in six patients and deteriorated in two patients. One patient showed a fluctuating unilateral hearing loss. CONCLUSION Audiological tests in patients with bacterial meningitis, especially children, should be started as soon as possible after the acute phase is over. As we found no deterioration of initial normal hearing after bacterial meningitis, repeated audiometry seems indicated only for those with diagnosed hearing loss at first assessment.
Database: Medline

49. The effect of tinnitus specific intracochlear stimulation on speech perception in patients with unilateral or asymmetric hearing loss accompanied with tinnitus and the effect of formal auditory training.
Author(s): Arts, Remo A G J; George, Erwin L J; Janssen, Miranda A M L; Griessner, Andreas; Zierhofer, Clemens; Stokroos, Robert J
OBJECTIVES Previous studies show that intracochlear electrical stimulation independent of environmental sounds appears to suppress tinnitus, even long-term. In order to assess the viability of this potential treatment option it is essential to study the effects of this tinnitus specific electrical stimulation on speech perception.

STUDY DESIGN A randomised, prospective crossover design.

STUDY SAMPLE Ten patients with unilateral or asymmetric hearing loss and severe tinnitus complaints.

RESULTS The audiological effects of standard clinical CI, formal auditory training and tinnitus specific electrical stimulation were investigated. Results show that standard clinical CI in unilateral or asymmetric hearing loss is shown to be beneficial for speech perception in quiet, speech perception in noise and subjective hearing ability. Formal auditory training does not appear to improve speech perception performance. However, CI-related discomfort reduces significantly more rapidly during CI rehabilitation in subjects receiving formal auditory training. Furthermore, tinnitus specific electrical stimulation has neither positive nor negative effects on speech perception.

CONCLUSIONS In combination with the findings from previous studies on tinnitus suppression using intracochlear electrical stimulation independent of environmental sounds, the results of this study contribute to the viability of cochlear implantation based on tinnitus complaints.

50. Longitudinal hearing loss in Wolfram syndrome.

Author(s): Karzon, Roanne; Narayanan, Anagha; Chen, Ling; Lieu, Judith E C; Hershey, Tamara

Source: Orphanet journal of rare diseases; Jun 2018; vol. 13 (no. 1); p. 102

Abstract: Background Wolfram syndrome (WFS) is a rare autosomal recessive disease with clinical manifestations of diabetes mellitus (DM), diabetes insipidus (DI), optic nerve atrophy (OA) and sensorineural hearing loss (SNHL). Although SNHL is a key symptom of WFS, there is limited information on its natural history using standardized measures. Such information is important for clinical care and determining its use as an outcome measure in clinical trials.

Methods Standardized audiologic measures, including pure-tone testing, tympanometry, speech perception, and the unaided Speech Intelligibility Index (SII) were assessed in patients with confirmed WFS annually. Mixed model analyses were used to examine main effects of age, time or interactions for pure tone average (PTA), high frequency average (HFA) and SII.

Results Forty WFS patients were evaluated between 1 and 6 times. Mean age at initial enrollment was 13.5 years (SD = 5.6). Patients were classified as having normal hearing (n = 10), mild-to-severe (n = 24) or profound SNHL (n = 6). Mean
Age of diagnosis for SNHL was 8.3 years (SD = 5.1) with 75% prevalence. HFA worsened over time for both ears, and SII worsened over time in the worse ear, with greater decline in both measures in younger patients. Average estimated change over 1 year for all measures was in the subclinical range and power analyses suggest that 100 patients would be needed per group (treatment vs. placebo) to detect a 60% reduction in annual change of HFA over 3 years. If trials focused on just those patients with SNHL, power estimates suggest 55 patients per group would be sufficient.

CONCLUSIONS: Most patients had a slow progressive SNHL emerging in late childhood. Change over time with standard audiologic tests (HFA, SII) was small and would not be detectable for at least 2 years in an individual. Relatively large sample sizes would be necessary to detect significant impact on hearing progression in a clinical trial. Hearing function should be monitored clinically in WFS to provide appropriate intervention. Because SNHL can occur very early in WFS, audiologists and otolaryngologists should be aware of and refer for later emerging symptoms.

Database: Medline

51. A clinical guidance to DFNA22 drawn from a Korean cohort study with an autosomal dominant deaf population: A retrospective cohort study.

Authors: Kim, Bong Jik; Han, Jin Hee; Park, Hye-Rim; Kim, Min Young; Kim, Ah Reum; Oh, Seung-Ha; Park, Woong-Yang; Oh, Doo Yi; Lee, Seungmin; Choi, Byung Yoon

Source: The journal of gene medicine; Jun 2018; vol. 20 (no. 6); p. e3019

Publication Date: Jun 2018

Publication Type(s): Journal Article

PubMedID: 29607572

Abstract: BACKGROUND: The MYO6 gene, if altered, can cause nonsyndromic hearing loss (NSHL) either in an autosomal dominant (AD) (DFNA22) or recessive form. The present study identified MYO6 variants in the cohort of Korean AD NSHL families and investigated the audiological phenotypes of DFNA22 with respect to suggesting clinical guides for the counseling of DFNA22. METHODS: A retrospective cohort study was performed on 81 AD NSHL families in two hospitals. Among them, five families (SH21, SB60, SB247, SB290 and SB305) segregating with MYO6 variant were genetically and clinically assessed. RESULTS: We identified two novel missense variants of MYO6: p.G223R (SB290) and p.T158R (SB305). A known heterozygous truncation variant, p.R205X, reported previously (SH21, SB60), was identified (SB247). The overall frequency of DFNA22 among such cases was 6.2%. Specifically, we found p.R205X from three of five DFNA22 families (60%). Five DFNA22 families demonstrated extremely diverse audiogram configurations and age of onset with even intrafamilial variations, whereas the severity of hearing loss mostly ranged within moderate. CONCLUSIONS: We report a recurring predominant allele and two new missense variants of MYO6, highlighting the significant contribution of MYO6 to AD NSHL in the Korean population. Extremely diverse audiological configurations of DFNA22 suggest that MYO6 should be considered in future genetic studies of patients with AD NSHL. Gradual progression with a good speech audiometry score could provide physicians with clinical insight with respect to advising patients to use hearing aids or consider middle ear implants, whereas, in the case of certain exceptional circumstances, physicians could provide patients with the option to consider a cochlear implant.

Database: Medline
52. Comparison between clinical and audiological results of tympanoplasty with double layer graft (modified sandwich fascia) technique and single layer graft (underlay fascia and underlay cartilage) technique.

**Author(s):** Nemade, Sanjana Vijay; Shinde, Kiran Jaywant; Sampate, Pratibha Bharat

**Source:** Auris, nasus, larynx; Jun 2018; vol. 45 (no. 3); p. 440-446

**Publication Date:** Jun 2018

**Publication Type(s):** Comparative Study Journal Article

**PubMedID:** 28855058

**Abstract:** INTRODUCTION Surgical repair of the tympanic membrane, termed a type one tympanoplasty is a tried and tested treatment modality. Overlay or underlay technique of tympanoplasty is common. Sandwich Tympanoplasty is the combined overlay and underlay grafting of tympanic membrane. OBJECTIVE To describe and evaluate the modified sandwich graft (mediolateral double layer graft) tympanoplasty using temporalis fascia and areolar fascia. To compare the clinical and audiological outcome of modified sandwich tympanoplasty with underlay tympanoplasty. METHODS A total of 88 patients of chronic otitis media were studied. 48 patients (Group A) underwent type one tympanoplasty with modified sandwich graft. Temporalis fascia was underlaid and the areolar fascia was overlaid. 48 patients (Group B) underwent type one tympanoplasty with underlay fascia technique. 48 patients (Group C) underwent type one tympanoplasty with underlay cartilage technique. We assessed the healing and hearing results. RESULTS Successful graft take up was accomplished in 47 patients (97.9%) in Group A, in 40 patients (83.3%) Group B, and in 46 (95.8%) patients in Group C. The average Air-Bone gap closure achieved in Group A was 24.4±1.7dB, in Group B, it was 22.5±3.5dB and in group C, it was 19.8±2.6dB. Statistically significant difference was found in graft healing rate. Difference in hearing improvement was not statistically significant. CONCLUSION Double layered graft with drum-malleus as a 'meat' of sandwich maintains a perfect balance between sufficient stability and adequate acoustic sensitivity.

**Database:** Medline

53. Objective Hearing Screening Measures: An Exploration of a Suitable Combination for Risk-Based Newborn Hearing Screening.

**Author(s):** Kanji, Amisha; Khoza-Shangase, Katijah

**Source:** Journal of the American Academy of Audiology; Jun 2018; vol. 29 (no. 6); p. 495-502

**Publication Date:** Jun 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29863463

**Abstract:** BACKGROUND The ideal hearing screening measure is yet to be defined, with various newborn hearing screening protocols currently being recommended for different contexts. Such diverse recommendations call for further exploration and definition of feasible and context-specific protocols. PURPOSE The aim of the study was to establish which combinations of audiological screening measures provide both true-positive (TP) and true-negative (TN) results for risk-based hearing screening, at and across time. RESEARCH DESIGN A longitudinal, repeated-measures design was employed. STUDY SAMPLE Three-hundred and twenty-five participants comprised the initial study sample. These participants comprised newborns and infants who were discharged from the
neonatal intensive care unit and high care wards to "step down" wards at two public sector hospitals within an academic hospital complex.

DATA COLLECTION AND ANALYSIS

Transient evoked otoacoustic emissions (TEOAEs), distortion product otoacoustic emissions (DPOAEs), and automated auditory brainstem response (AABR) were conducted at the initial and repeat hearing screening. Diagnostic audiological assessments were also conducted. Results from combinations of audiological screening measures at the initial and repeat hearing screening were analyzed in relation to the final diagnostic outcome (n = 91). Participants were classified as presenting with an overall "refer" if the outcome for any one test was "refer." The overall screening outcomes for different test combinations were compared using McNemar's test for paired data. Proportions across different test combinations were compared by the z-test for proportions.

RESULTS

Because of the absence of participants with hearing loss in the current study sample, analysis could only be conducted in relation to TN findings (specificity) and not TP findings (sensitivity). The percentage of TN findings was highest at the repeat hearing screening using any test or combination of tests when compared with findings from the initial hearing screening. TEOAE combined with AABR (TEOAE/AABR) (p < 0.0001), DPOAE combined with AABR (DPOAE/AABR) (p < 0.0001), and the combination of all three screening measures (p < 0.0001) yielded the highest percentage specificity at the repeat hearing screening when compared with the initial hearing screening.

CONCLUSION

The best specificity was noted at the repeat hearing screening. Within a resource stricken context, where availability of all screening measures options may not be feasible, current study findings suggest the use of a two-stage AABR protocol or TEOAE/AABR protocol.

Database: Medline

54. Neonates with congenital Cytomegalovirus and hearing loss identified via the universal newborn hearing screening program.

Author(s): Rawlinson, William D; Palasanthiran, Pamela; Hall, Beverly; Al Yazidi, Laila; Cannon, Michael J; Cottier, Carolyn; van Zuylen, Wendy J; Wilkinson, Monica

Source: Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology; May 2018; vol. 102 ; p. 110-115

Publication Date: May 2018

Publication Type(s): Journal Article

PubMedID: 29571077

Abstract: BACKGROUND

Congenital cytomegalovirus (CMV) is the most common non-genetic cause of sensorineural hearing loss. Currently, there are no universal CMV screening programs for newborns or routine CMV testing of neonates with hearing loss in Australia, or elsewhere. OBJECTIVE

This study was undertaken to determine the prevalence of congenital CMV infection in infants with hearing loss identified using routine resources via the Australian universal neonatal hearing screening (UNHS) program. STUDY DESIGN

Infants who failed UNHS, referred for audiological testing and found to have permanent hearing loss were screened for CMV via PCR of urine and saliva. Congenital CMV was diagnosed if CMV was detected in infants ≤30 days of age, or using retrospective testing on stored new born screening cards, retrospective testing, or using clinical criteria if >30 days of age. The cohort was analyzed for time of testing and prevalence of congenital CMV determined. RESULT

The Audiology Department reviewed 1669 infants who failed UNHS between 2009 and 2016. Thirty percent (502/1669) had permanent hearing loss confirmed, of whom 336/502 were offered CMV testing. A definite (n = 11) or probable (n = 8) diagnosis of congenital CMV occurred in 19/323 (5.9%), of whom definite diagnoses were made in 4/19 on tests positive
prior to 21 days of life, in 5/19 who were positive on neonatal blood screening card (NBSC) testing, in 2/19 who were positive on placental testing. In 8/19 probable diagnoses were made based on positive testing between ages 23-42 days and a consistent clinical syndrome in the absence of another cause for hearing loss after genetic and other testing. CMV testing mirrored the timing of audiological testing, with ~40% completing audiology and CMV testing by 21 days, and 64% by 30 days.

CONCLUSION This program, utilizing existing clinical services identified probable congenital CMV in ~6% of a large cohort failing UNHS with permanent hearing loss, of whom more than half were definite diagnoses. No additional assets were required to those already existing in this tertiary referral pediatric centre, whilst providing useful and timely data for clinical and audiological management.

Database: Medline

55. Rehabilitation for disabling hearing loss: evaluating the need relative to provision of hearing aids in the public health care system.

Author(s): Hlayisi, Vera-Geneye; Ramma, Lebogang

Source: Disability and rehabilitation; May 2018 ; p. 1-4

Publication Date: May 2018

Publication Type(s): Journal Article

PubMedID: 29779397

Abstract: PURPOSE To determine the demand relative to supply of hearing rehabilitation through hearing aids for those with disabling hearing loss in a public health care setting in South Africa. METHODS Retrospective cross-sectional survey of medical records of all patients were seen at a public hospital (Polokwane Provincial Academic) during 2012-2014, was conducted. Audiological data from 3894 medical folders were accessed and reviewed; thereafter, results were analyzed using descriptive statistics. RESULTS Of the 3894 medical folders reviewed, two-third (62%, n = 2402) were diagnosed with hearing loss, mostly bilaterally (81%). More than 30% of all patients diagnosed with hearing loss were ≤10 years old. Sensorineural (permanent) hearing loss was diagnosed most often (38%, n = 913) and 74% (n = 1778) of hearing losses diagnosed were of moderate or worse severity (i.e., disabling loss). Hearing aids were fitted to only 15% (n = 272) of those diagnosed with disabling hearing loss and most hearing aid fittings were to low-income adult patients (≥25 years old) with more severe-profound hearing losses. CONCLUSION This study showed that the need for hearing aids to provide hearing rehabilitation far exceeds the supply. Therefore, a multi-pronged approach that includes increased budget allocation and exploring low-cost interventions for developing countries to meet the demand for hearing aids. Furthermore, study highlighted a high prevalence of hearing loss in those younger than 10 years of age, and thus highlights the need for early intervention as well as intensifying efforts to reduce preventable causes of hearing loss. Implications for Rehabilitation Audiologists need to advocate for an increase in budget allocation for hearing rehabilitation devices. Study indicates need to explore low-cost hearing devices/rehabilitation interventions for developing countries. Health professionals should consider preventative measures to reduce prevalence of preventable hearing loss.

Database: Medline

**Author(s):** Westergaard-Nielsen, Marie; Amstrup, Tine; Wanscher, Jens Højberg; Brusgaard, Klaus; Ousager, Lilian Bomme

**Source:** International journal of pediatric otorhinolaryngology; May 2018; vol. 108; p. 208-212

**Publication Date:** May 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29605356

**Abstract:**

OBJECTIVE Evaluation of clinical findings and audiological outcome after surgery in a Danish family with autosomal dominant facio-audio-symphalangism syndrome with stapes fixation, syndactyly and symphalangism.

METHODS Retrospective report on eight affected family members in a Danish family. Clinical investigation included X-ray, audiology and in one case video-recorded surgery. Main outcome measure was audiologic results after stapedectomy. Sanger DNA sequencing of NOG was performed on peripheral blood.

RESULTS Audiology analysis showed that seven of eight affected family members had bilateral conductive hearing loss. Three patients were treated with stapedectomy, on one or both ears, due to fixation of stapes. All the affected members had syndactyly and symphalangism. A not previously reported mutation in the NOG gene (c.688_699del, p.Cys230_Cys232delins11) was found to segregate with the stapes fixation, syndactyly, and symphalangism. p.Cys230_Cysdelins11 was classified as likely pathogenic according to guidelines from the American College of Medical Genetics and Genomics.

CONCLUSION The clinical presentation of the reported mutation corresponds with previous case reports of families with NOG mutation. In this family, surgery with stapedectomy had lasting effect without renewed fixation of the stapes in a follow up period of 18 months-38 years.

**Database:** Medline

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57. **Effectiveness of Auditory Measures for Detecting Hidden Hearing Loss and/or Cochlear Synaptopathy: A Systematic Review.**

**Author(s):** Barbee, Christi M; James, Jessica A; Park, Jin Hyung; Smith, Emily M; Johnson, Carole E; Clifton, Shari; Danhauer, Jeffrey L

**Source:** Seminars in hearing; May 2018; vol. 39 (no. 2); p. 172-209

**Publication Date:** May 2018

**Publication Type(s):** Journal Article Review

**PubMedID:** 29915454

**Abstract:** Standard audimetric evaluations are not sensitive enough to identify hidden hearing loss (HHL) and/or cochlear synaptopathy (CS). Patients with either of these conditions frequently present with difficulty understanding speech in noise or other complaints such as tinnitus. The purpose of this systematic review is to identify articles in peer-reviewed journals that assessed the sensitivity of audioligic measures for detecting HHL and/or CS, and which showed potential for use in a clinical test battery for these disorders. A reference librarian submitted specific boolean terminology to MEDLINE, Embase, and Web of Science. The authors used a consensus approach with specially designed score sheets for the selection of titles, abstracts, and then articles for inclusion in the systematic review and for quality assessment. Fifteen articles were included in the systematic review. Seven articles involved humans; seven involved animals, and one study used both humans and animals. Results showed that pure-tone audiometry to 20 kHz, otoacoustic emissions, electrocochleography, auditory brainstem response (ABR), electrophysiological tests, speech recognition in noise with and without temporal distortion, interviews, and self-report measures have
been used to assess HHL and/or CS. For HHL, ultra-high-frequency audiometry may help identify persons with sensory hair cell loss that does not show up on standard audiograms. Promising nonbehavioral measures for CS included ABR wave I amplitude, the summating potential-to-action potential ratio, and speech recognition in noise with and without temporal distortion. Self-report questionnaires also may help identify auditory dysfunction in persons with normal hearing.

**Database:** Medline

58. [Computer based neurocognitive testing in audiology].

**Author(s):** Völter, Christiane; Götze, Lisa; Falkenstein, Michael; Dazert, Stefan; Thomas, Jan Peter

**Source:** Laryngo- rhino- otologie; Apr 2018; vol. 97 (no. 4); p. 246-254

**Publication Date:** Apr 2018

**Publication Type(s):** English Abstract Journal Article

**PubMedID:** 29359310

**Abstract:**
INTRODUCTION
Due to the demographic changes neurocognition has become an important issue also in the field of hearing rehabilitation.

BACKGROUND
The present study aimed to evaluate the feasibility of a neurocognitive test using computer based tasks with regard to the elderly with and without hearing loss and its practicability for the daily clinical ENT setting.

PATIENTS
171 patients of both genders with normal hearing or a profound hearing loss were enrolled in the study: 90 middleaged persons were between 50 and 64 years (57.0 ± 4.5 years) and 81 elderly persons 65 years and older (72.5 ± 5.4).

METHOD
A set of computer-based neurocognitive tasks with only visual instructions covering attention, processing speed, short- and longterm memory as well as executive functions was applied. A presession under the supervision of a trained assistant was included.

RESULTS
All patients were capable to complete the assessment by themselves regardless of age and hearing status, however the hearing impaired required 15 minutes more to finish the pretest and reported about a higher level of effort than normal hearing subjects (71 % versus 63 %). Interestingly 90 % of the older individuals claimed the test to fit with all ages, whereas 30 % of the middleaged participants remained skeptical (p = 0.02).

CONCLUSION
The presented neurocognitive assessment might be a useful instrument which can be easily included into the daily clinical ENT. It may give important hints to the otolaryngologist in order to develop the most effective hearing rehabilitation strategy.

**Database:** Medline

59. Association of Metabolic Syndrome With Sudden Sensorineural Hearing Loss.

**Author(s):** Jung, Su Young; Shim, Haeng Seon; Hah, Young Min; Kim, Sang Hoon; Yeo, Seung Geun

**Source:** JAMA otolaryngology-- head & neck surgery; Apr 2018; vol. 144 (no. 4); p. 308-314

**Publication Date:** Apr 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29450496

**Abstract:**
Importance
Each of the 5 diagnostic criteria or factors of metabolic syndrome—hyperglycemia or type 2 diabetes, hypertension, obesity, elevated triglyceride levels, and decreased high-density lipoprotein cholesterol level—is associated with the pathophysiologic features of sudden
sensorineural hearing loss (SSNHL). Little is known, however, about the association of metabolic syndrome, defined as the presence of at least 3 of these factors, with the prognosis of SSNHL.

**Objective**

To evaluate the association of metabolic syndrome with the rate of recovery from SSNHL.

**Design, Setting, and Participants**

This retrospective medical record review of 124 patients treated for SSNHL at a single tertiary university hospital was performed from June 1, 2014, through May 31, 2016. Medical records were reviewed for demographic and clinical characteristics and audiologic variables.

**Exposure**

Sudden sensorineural hearing loss.

**Main Outcomes and Measures**

Correlation among demographic and clinical characteristics, audiologic results, and prognosis.

**Results**

Of the total 124 patients (52 men [41.9%]; 72 women [58.1%]; mean [SD] age, 56.0 [14.6] years), 70 had metabolic syndrome and 54 did not. Rates of type 2 diabetes (36 [51.4%] vs 6 [11.1%]; mean difference [MD], 40.3%; 95% CI, 24.4%-53.1%), hypertension (46 [65.7%] vs 9 [16.7%]; MD, 49.1%; 95% CI, 32.3%-61.7%), and obesity (47 [67.1%] vs 6 [11.1%]; MD%, 56.0; 95% CI, 40.0%-67.5%) and mean (SD) concentrations of triglycerides (192.9 [159.7] vs 133.4 [116.6] mg/dL; MD, 59.4 mg/dL; 95% CI, 53.0-65.9 mg/dL) were significantly higher and mean (SD) concentrations of high-density lipoprotein cholesterol (45.8 [9.4] vs 62.6 [17.7] mg/dL; MD, 16.8 mg/dL; 95% CI, 16.1-17.4 mg/dL) were significantly lower in the group with metabolic syndrome than in the group without metabolic syndrome. Mean (SD) pure-tone audiometry thresholds were similar at baseline in the groups with and without metabolic syndrome (65.0 [24.2] vs 60.8 [24.2] dB; MD, 4.3 dB; 95% CI, 3.2-5.4 dB), but recovery rates after treatment were significantly lower in the group with metabolic syndrome (16 [22.9%] vs 23 [42.6%]; MD, -19.7%; 95% CI, -35.4% to -3.2%). No differences were found in the 5 factors among patients with metabolic syndrome who did and did not recover.

Level of hearing loss was higher in patients with than without metabolic syndrome, but the difference was not statistically significant. Audiogram patterns also differed but not significantly.

Hearing recovery rates were similar in patients with 3 factors of metabolic syndrome and those with none but differed significantly between patients with 4 or more factors and those without metabolic syndrome (4 [19.0%] vs 27 [50.0%]; MD, -31.0%; 95% CI, -48.1% to -6.4%).

**Conclusions and Relevance**

The rate of recovery from SSNHL was lower among patients with metabolic syndrome than among those without metabolic syndrome, and prognosis was poorer in patients with 4 or more diagnostic factors of the metabolic syndrome.

**Database**: Medline

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60. Does screening for congenital cytomegalovirus at birth improve longer term hearing outcomes?

**Author(s)**: Hilditch, Cathie; Liersch, Bianca; Spurrier, Nicola; Callander, Emily J; Cooper, Celia; Keir, Amy K

**Source**: Archives of disease in childhood; Apr 2018

**Publication Date**: Apr 2018

**Publication Type(s)**: Journal Article Review

**PubMedID**: 29705727

Available at Archives of Disease in Childhood - from BMJ

Available at Archives of Disease in Childhood - from ProQuest (Hospital Premium Collection) - NHS Version

**Abstract**: Currently, the diagnosis of congenital cytomegalovirus (cCMV) infection in most highly resourced countries is based on clinical suspicion alone. This means only a small proportion of cCMV infections are diagnosed. Identification, through either universal or targeted screening of
asymptomatic newborns with cCMV, who would previously have gone undiagnosed, would allow for potential early treatment with antiviral therapy, ongoing audiological surveillance and early intervention if sensorineural hearing loss (SNHL) is identified. This paper systematically reviews published papers examining the potential benefits of targeted and universal screening for newborn infants with cCMV. We found that the treatment of these infants with antiviral therapy remains controversial, and clinical trials are currently underway to provide further answers. The potential benefit of earlier identification and intervention (eg, amplification and speech therapy) of children at risk of later-onset SNHL identified through universal screening is, however, clearer.

**Database:** Medline

61. *Interregional Newborn Hearing Screening via Telehealth in Ghana.*

**Author(s):** Ameyaw, Graham Amponsah; Ribera, John; Anim-Sampong, Samuel

**Source:** Journal of the American Academy of Audiology; Feb 2018

**Publication Date:** Feb 2018

**Publication Type(s):** Journal Article

**PubMedID:** 30461394

**Abstract:**BACKGROUND Newborn hearing screening is a vital aspect of the Early Hearing Detection and Intervention program, aimed at detecting hearing loss in children for prompt treatment. In Ghana, this kind of pediatric hearing service is available at only one health care facility located in the Greater Accra Region. The current practice in effect has virtually cut-off infants in the other regions from accessing hearing screening and other pediatric audiological services. This has prompted a study into alternative methodologies to expand the reach of such services in Ghana. The present study was designed to assess the feasibility of using telehealth to deliver newborn hearing screening across Ghana.

**PURPOSE** To assess the feasibility of using telehealth to extend newborn hearing screening services across the ten regions of Ghana.

**RESEARCH DESIGN** A correlational study was designed to determine the extent of association between test results of telehealth and the conventional on-site methods (COMs) for conducting newborn hearing screening. The design also allowed for testing duration between the two methods to be compared.

**STUDY SAMPLE** Fifty infants from the Brong-Ahafo Regional Hospital (BARH) were enrolled. The infants aged between 2 and 90 days were selected through convenience sampling. There were 30 males and 20 females.

**PROCEDURE** Newborn hearing screening using distortion product otoacoustic emissions were performed via telehealth. By adopting the synchronous telehealth model, an audiologist located at the Korle-Bu Teaching Hospital conducted real-time hearing screening tests over the internet on infants who were at the BARH. The former and latter hospitals are located in the Greater Accra and the Brong-Ahafo Regions, respectively. As a control, similar hearing screening tests were conducted on the same infants at BARH using the conventional face-to-face on-site hearing screening method.

**DATA COLLECTION AND ANALYSIS** The test results and testing duration of the telehealth method and the conventional on-site approach were compared and subjected to statistical analysis. Here, the Spearman's correlation coefficient (rs) was used to determine the level of correlation between the test results, whereas the paired t-test statistic was used to test the level of significance between the testing duration of the two methods.

**RESULTS** Analysis of the test results showed a significantly high positive correlation between the telehealth and the COMs (rs = 0.778, 0.878, 0.857, 0.823, p < 0.05). The mean testing duration (in seconds) of telehealth was 27.287 (standard deviation = 27.373) and that of the COM was 24.689 (standard deviation = 27.169).

**CONCLUSION** The study showed the feasibility of establishing an interregional network of
newborn hearing screening services across Ghana using telehealth. It is more efficient to deploy telehealth for pediatric hearing services than to have patients travel many hours to the Greater Accra Region for similar services. Poor road network, high transportation costs, and bad weather conditions are a few of the reasons for avoiding long distance travel in Ghana.

**Database:** Medline
NICE

Hearing loss in adults: assessment and management
NICE guideline [NG98]
Published: June 2018
https://www.nice.org.uk/guidance/ng98

Hearing loss overview
NICE pathway
Published: 20th June 2018
https://pathways.nice.org.uk/pathways/hearing-loss#content=view-info-category%3Avview-about-menu

RCN competences: an education and training framework for ear nose and throat nursing
Royal College of Nursing
Update 2018 (25.4.2018)

RCN competences: an education and training framework for aural care nursing and treatment provision
Royal College of Nursing
Update 2018 (25.4.2018)

Good practice guide for social workers in England and Wales: working with adults with acquired hearing loss [PDF]
British Association of Social Workers
Published: 01 April 2018
http://cdn.basw.co.uk/upload/basw_32617-10.pdf

Please note that information provided in this update is collated from a variety of sources but coverage of the topic is not comprehensive.

Every effort has been made to ensure that the information provided is accurate, up-to-date and complete. However, articles may contain errors and the inclusion of a web link does not
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