

speech audiometry, acoustic immittance measures, transient evoked otoacoustic emissions and auditory brainstem response. RESULTS: In the clinical history the patient reported she had been having great hearing difficulties especially on the right ear for ten years without apparent cause. Auditory evaluation was carried out in two sessions of 45 minutes each. During the first session, the patient showed difficulties for pure tone and speech audiometry revealed results compatible to normal peripheral hearing (normal hearing thresholds, normal acoustic immittance measures, present transient and distortion product evoked otoacoustic emissions). Click evoked auditory brainstem response showed normal nerve conduction for neurologic protocol and electrophysiologic thresholds compatible with normal hearing in the frequency band of 2000-4000 Hz bilaterally. CONCLUSION: Audiological evaluation revealed hearing thresholds within normal limits bilaterally. This case highlights the importance of electroacoustic and electrophysiologic measures as a complement in the differential diagnosis in cases of nonorganic hearing loss.

POSTER SESSION I - DATE: 29/3/2010 TIME: 8H00 - 18H00 - PANEL 76

ASSOCIATION BETWEEN HEARING LOSS AND DEPRESSION IN NON-INSTITUTIONALIZED ELDERLY PEOPLE

Authors
ADRIANE RIBEIRO TEIXEIRA¹, ANDRÉA KRÜGER GONÇALVES¹, CINTIA DE LA ROCHA FREITAS², ANA MARIA PUJOL VIEIRA DOS SANTOS², SILVIA DORNELLES¹, ÂNGELO JOSÉ GONÇALVES BÓS³

Institution
1. UFRGS, Universidade Federal do Rio Grande do Sul
2. ULBRA, Universidade Luterana do Brasil
3. PUCRS, Pontifícia Universidade Católica do Rio Grande do Sul

Abstract: The population aging is a worldwide phenomenon. This process produces various physiological alterations and the auditory system is one of the first observed. Hearing loss causes difficulties in speech comprehension, which in turn originates detachment from family and social groups. This isolation may lead to depression. This study's objective was to verify the association between hearing loss and depression in a group of non-institutionalized elderly. Individuals 60 years and older who performed a complete hearing evaluation, in an acoustic booth, and answered the Geriatric Depression Scale (GDS) questionnaire participated in this study. The audiometry used hearing thresholds for air (250Hz to 8000Hz) and bone conduction (500Hz to 4000Hz), by an Interacoustics model AD-28 audiometer. Using the same equipment, participants tested for speech audiometry (Speech Recognition Percent Index and Speech Reception Threshold). The acoustic immittance measures were performed with the Interacoustics model AT235 middle ear analyzer. The presence and level of hearing loss were determined according to the World Health Organization's (WHO) classification. The analysis of acoustic immittance measures used the classification proposed by Jerger (1970). The study evaluated 54 elderly people, 26 (48.1%) females and 28 (51.9%) males. Their ages varied between 60 and 84 with an average of 70.4 ± 7.16 years of age. Regarding their hearing level, 39 (72.2%) presented altered hearing thresholds, of those 17 (31.5%) had a slight hearing loss and 22 (40.7%) a moderate hearing loss. Twenty-five (46.3%) participants had signs of depression, 23 (42.6%) had slight to moderate depression and 2 (3.7%) severe depression. Data analysis demonstrated association between the presence of hearing loss and depression (p=0.016), considering that of the 25 (46.3%) elderly people with depression, 22 had hearing loss. Even though it is not significant (p=0.18), the association between the level of hearing loss was positive in relationship to the severity of depression signs. In other words, the larger the hearing loss, the larger the severity of depression signs. Data analysis demonstrates a tendency to this association, considering that of the 29 elderly people (53.7%) with absence of depression, the majority presented normal hearing thresholds (41.4%). Taking in to consideration the 23 (42.6%) elderly people with slight to moderate depression signs, only 3 (5.6%) presented normal hearing thresholds. The remaining had slight (14.8%) or moderate (22.23%) hearing loss. Individuals with severe depression (3.7%) presented slight (1.8%) or moderate (1.9%) hearing loss. Therefore, the study concludes that regarding the researched elderly people, there is a strong association between hearing loss and depression signs and a tendency to exist an association between the level of hearing loss and the severity of depression signs

POSTER SESSION I - DATE: 29/3/2010 TIME: 8H00 - 18H00 - PANEL 77

ASSOCIATION BETWEEN DYSPHONIA AND HEARING LOSS IN MIDDLE-AGE AND ELDERLY PEOPLE

Authors
ADRIANE RIBEIRO TEIXEIRA¹, SILVIA DORNELLES¹, NATACHA SIQUEIRA¹, ALINE STANISLAWSKI SILVA¹, CAMILA MALLMANN¹, CAROLINE WÜPPEL¹, ISABEL CRISTINA BERGER¹, ANDREA KRÜGER GONÇALVES¹, CINTIA DE LA ROCHA FREITAS²

Institution
1. UFRGS, Universidade Federal do Rio Grande do Sul
2. ULBRA, Universidade Luterana do Brasil

Abstract: Aging is a process marked by the decline in functioning of various organs of the body, among them hearing loss and vocal alterations like dysphonia. These disorders are usually diagnosed and treated by speech-language therapist and audiologist. There are indications that, in many cases, hearing loss and dysphonia are associated. The presence of hearing loss may significantly influence vocal quality, aside from the changes brought by aging, as a result of the tendency to increase the voice intensity (loudness), by the difficulties in its perception. Therefore, hearing loss may be a precipitating or aggravating factor of dysphonia. Based on these premises, this study's tried to verify if an association existed between hearing loss and dysphonia in a group of middle-age and elderly adults. The participants screened for hearing loss using a pure tone audiometry test in an acoustically treated booth. Hearing test used thresholds for air conduction (from 250Hz to 8000Hz) and bone conduction (500Hz to 4000Hz), to determine type and level of hearing loss. In order to measure the level of hearing loss the study used the classification proposed by the World Health Organization. To verify the presence of dysphonia, the participants performed perceptual-auditory analysis of the vocal type, from the point of view of three evaluators. The study's sample involved 27 elderly people, 21 (77.8%) females and 6 (22.2%) males. The participant's age ranged between 54 and 89, with an average of 68.5 ± 8.8 years of age. Among the participants, 23 (85.2%) presented hearing loss while 4 (14.8%) were normal. The number of participants with dysphonia, was the same, than those with hearing loss, 23 (85.2%) presented vocal alterations and 4 (14.8%) presented adapted voice, which means without signs of alteration. Data analysis demonstrated evidence of a strong association between dysphonia and hearing loss in the studied group (p=0,000). These results establish the need of joint action among speech-language therapist and audiologist, as well as reinforce the importance of interdisciplinary action for the care of individuals with voice and hearing disorders.

88

POSTER SESSION I - DATE: 29/3/2010 TIME: 8H00 - 18H00 - PANEL 78

INTENSITY PERCEPTION OF TINNITUS AND TINNITUS HANDICAP INVENTORY RESULTS IN A GROUP OF ELDERLY PEOPLE

Authors
ADRIANE RIBEIRO TEIXEIRA¹, MICHELLE GASSEN PAULO NUNES³, CINTIA DE LA ROCHA FREITAS², ANDRÉA KRUGER GONÇALVES¹

Institution
1. UFRGS, Universidade Federal do Rio Grande do Sul
2. ULBRA, Universidade Luterana do Brasil
3. Centro Auditivo, Centro Auditivo

Abstract: The population aging is a phenomenon observed in both developed and developing countries. Increase in life's expectancy is accompanied by a series of physiological alterations, among them presbiacusis, which is often accompanied by tinnitus. Several authors reported association between tinnitus and the affected individuals' quality of life. This study's aimed to verify the association between intensity of the perception of tinnitus and the handicap level caused by this symptom in a group of elderly individuals, as well as to verify the influence of the sex variable in the level of handicap. In this study 36 elderly people (60 years of age and above) answered a questionnaire on socio-demographics and tinnitus and the Tinnitus Handicap Inventory (THI). Data analysis demonstrated that the major part of the elderly were female (72.2%). The average age was of 68.67 ± 6.84 years. Regarding tinnitus intensity, 16 (44.4%) described their tinnitus as weak; 13 (36.1%) as average and 7 (19.4%) as strong. In relationship to THI scores, 15 elderly (41.6%) showed a handicap level 1; 11 (30.56%) handicap 2; 4 (11.1%) handicap 3; 4 (11.1%) handicap level 4 and 2 (5.5%) handicap level 5. Analyzing the intensity perception of tinnitus described by elderly people and the level of handicap measured through THI, it was observed that there was no statistically significant association (p = 0.251). Likewise there was no association between sex and handicap level (p = 0.300). We concluded, therefore, that the intensity of tinnitus perception described by participants and sex were not determining factors for worsening the handicap caused by tinnitus.

POSTER SESSION I - DATE: 29/3/2010 TIME: 8H00 - 18H00 - PANEL 79

STUDY OF OTOACOUSTIC EMISSIONS IN NORMALLY HEARING WORKERS OF A SHOE INDUSTRY EXPOSED TO INDUSTRIAL NOISE

Authors
ADRIANE RIBEIRO TEIXEIRA¹, TATIANA DAHMER², SIMONE BARCELOS TEIXEIRA²

Institution
1. UFRGS, Universidade Federal do Rio Grande do Sul
2. ULBRA, Universidade Luterana do Brasil

Abstract: A worker exposed to occupational noise risks his/her health and predisposes him/herself to present a range of auditory and extra-auditory effects caused by high levels of sound pressure. Among the auditory effects is hearing loss. Studies have shown evidence that the changes in otoacoustic emission examinations results can be detected before the lowering of audiometric thresholds. Therefore the goal of this research was to verify the presence of transient evoked otoacoustic emissions (TEOAE) in ears of normally hearing people exposed to occupational noise. For this study examined 87 ears of 53 shoe industry workers, stationed at the cutting sector. The decision to study this sector was due to the fact that noise was the only agent present. In other sectors of the industry there was concomitant exposure to noise and chemical products. The evaluation included the patient's medical history, meatoscopy, threshold tonal audiometry, measures of acoustic immittance and the study of transient evoked otoacoustic emissions (TEOAE). The study found that 94.25% of the ears presented TEOAE. There was no side (left or right ear) difference in the number of ears that presented TEOAE. Neither time worked at the industry nor sex were determining factors for the presence of TEOAE. It should be pointed out that all the ears that did not present TEOAE were of individuals exposed to noise for less than one year, suggesting that other causes were responsible for the lesion in external ciliated cells. The study concluded that almost all evaluated workers' ears presented otoacoustic emissions. Therefore, in this group, the exposure to noise was not determining for a lesion of the external ciliated cells. One of the factors that can determine this type of result is the preventive actions adapted by the company.

POSTER SESSION I - DATE: 29/3/2010 TIME: 8H00 - 18H00 - PANEL 80

A STUDY OF OTOACOUSTIC EMISSIONS IN INDIVIDUALS EXPOSED TO NOISE AND CHEMICAL PRODUCTS

Authors
ADRIANE RIBEIRO TEIXEIRA¹, MICHELLE INÉS FRÖHLICH-HAMMES³, LUCIMAR PILOT DA SILVA BRUM²

Institution
1. UFRGS, Universidade Federal do Rio Grande do Sul
2. ULBRA, Universidade Luterana do Brasil
3. SESI - RS, Serviço Social da Indústria

Abstract: Chemical products are just as harmful as noise to the auditory system, and these factors may act isolated or in synergic form. Aside from audiometry, transient evoked otoacoustic emissions (TEOAE) may be useful in monitoring and preventing hearing loss, because the record of the TEOAE demonstrates alterations in the response before they are registered in hearing threshold. This study has the following objectives: to verify the absence of TEOAE in workers with normal hearing thresholds exposed to noise and/or chemical products, as well as to determine if there was an association between time at work and the absence of otoacoustic emissions. Initially we invited 315 workers of a chemical industry to participate in this study. The industry produces varnish, paint, enamel, and lacquer. Of those workers, 34 could not participate because of their hearing loss. Therefore, 281 normally hearing workers participated of the study, 74 with no risk exposure (administration), 38 exposed to noise, 40 exposed to chemical products and 129 exposed to noise and chemical products. All answered a socio-demographic questionnaire and participated in a meatoscopy, pure tone audiometry and TEOAE tests. The participants ranged in age between 21 and 59, and the length of time worked at the company varied from 6 months to more than 15 years. Among the evaluated workers, 56 (19.9%) presented absence of otoacoustic emissions, 8 (2.8%) being from the sector considered to be of no risk (administration); 8 (2.8%) were exposed to noise; 6 (2.1%) exposed to chemical products and 34 (12%) exposed to noise and chemical products. Along with workers with absent otoacoustic emissions, 9 (3.2%) worked in the company between 6 months and 1 year, 23 (8.1%) between 2 and 5 years, 10 (3.5%) between 6 and 10 years, 5 (1.7%) between 11 and 15 years and 9 (3.2%) for more than 15 years. We observed that, even with exposure to noise and/or chemical products, the majority of workers had otoacoustic emissions present. Analyzing the data according to the type of risk, in chemicals and noise sector there was more absence of TEOAE when

