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SUWIMOL RUENCHAROEN : AUDIOLOGICAL FINDINGS IN
DIABETES MELLITUS PATIENTS WITH AND THOSE WITHOUT HEARING
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Regarding hearing impairment associated with diabetes mellitus, many researchers found that diabetic patients had poorer hearing threshold than nondiabetics in the same age group. Discrepancy in the incidence of hearing impairment in DM has been reported. Subclinical hearing impairment involving the cochlea, the acoustic nerve and brainstem in asymptomatic diabetic patients warranted further investigation. The purpose of this study was to investigate audiological findings in diabetes mellitus patients compared to those in a normal control group and audiological findings in asymptomatic diabetic patients compared to those in symptomatic diabetic patients. Correlation between the audiological findings and various clinical parameters of the diabetics was also studied. The hearing threshold, tympanogram, otoacoustic emissions (OAEs) and auditory brainstem response (ABR) were measured in 13 (3m/10f) symptomatic diabetic patients mean aged 58.31 years, 26 (8m/18f) asymptomatic diabetic patients mean aged 52.31 years and 22 (3m/19f) normal control subjects mean aged 51.14 years. Results indicated that the pure tone threshold at 1-8 kHz, CEOAE amplitude at 1.5, 2, and 3 kHz, DPOAE amplitude at 1.5, 2.5, 3 kHz and absolute latencies of wave I, V interpeak latencies of wave III-V of ABR in both ears and interpeak latencies of wave I-V in the right ear were significantly different ($P < 0.05$) between diabetic patients and normal control subjects. The pure tone threshold at 0.25-8 kHz and DPOAE amplitude at 1.25, 3, 4 and 5 kHz were significantly different ($P < 0.05$) between symptomatic and asymptomatic diabetic patients. No correlation was found between any of the audiological findings and duration of diabetes, HbA1C or FBS level in asymptomatic diabetic patients. The results of this study confirmed that hearing impairment in diabetes mellitus patients was more severe than in control subjects. Although hearing impairment in symptomatic diabetic patients was similar to that in asymptomatic diabetic patients, subclinical involvements were more severe. In diabetes mellitus, subclinical hearing impairment was manifested as abnormal OAEs and ABR in good ears. These findings suggest that hearing loss in diabetes mellitus should be considered as a chronic complication of diabetes. Diabetes mellitus patients should be evaluated for subclinical hearing loss early at the first diagnosis and at 6 month intervals.