

Does Objective Audiometry Can Predict Subjective Satisfaction In Patients With Hearing Aid?

Woo Ri Choi, Jun Woo Park, Eun Jeong Hwang, Yeo Ra Ha, Jong
Woo Chung and Woo Seok Kang
Department of Otolaryngology-Head & Neck Surgery, Asan Medical
Center, University of Ulsan College of Medicine, Seoul, South Korea

Objectives: This study was aimed to find out which objective audiometry of the HA can be used to maximize subjective satisfaction in patients with HA.

Background: Hearing impairment degrades the quality of life causing poor communication, limited social activities, disability to protect oneself and even psychological depression, especially in elderly patients. Hearing aids (HA) are considered crucial tools in easing communication for patients with hearing loss. Audiometric information is used to adjust the HA to obtain appropriate benefit, but patients often complain of various inconveniences after wearing a fitted HA. To achieve successful HA efficacy, it is important to confirm if the HA is well satisfying patients.

Methods: Twelve patients with moderate hearing loss and 8 patients with moderately-severe hearing loss were included in this prospective clinical study. All of the patients used the ITC (In the canal) type of WIDE7 HA provided by BSL. We performed Korean version of Hearing Handicap Inventory for the Elderly (K-HHIE) and K-IOI-HA (Korean version of International Outcome Inventory for Hearing Aids) before and 1, 3, 6 months after wearing a HA. We also performed pure tone audiometry (PTA), speech audiometry (SA), functional gain (FG), hearing in noise test (HINT) and central auditory processing disorder tests; frequency pattern test (CA-f), duration pattern test (CA-d), dichotic test (CA-Di). Patients were divided into two groups (group A-HHIE: improved, group B-HHIE: same or worse) by comparing the score of K-HHIE before wearing a HA and 6 month later. In the 6-month K-IOI-HA questionnaire, 21 points were known as the average score. Based on this, we also divided patients into two groups (group A-IOI : higher than 21, group B-IOI : same or lower than 21). Age and initial audiometry results were evaluated with independent samples t test. Repeated measures ANOVA was used to analyze the differences of objective tests between the groups.

Results: Patients mean age was 62.5 years. Group A-HHIE included 6 patients and group B-HHIE included 14 patients. There was no statistically significant difference in age and unaided hearing between two groups. Group A-HHIE showed statistically significant improvement in CA-f. In PTA, SA, HINT, CA-d and CA-Di, Group A-HHIE showed higher improvements than group B-HHIE, which was not statistically significant. Group A-IOI included 12 patients and group B-IOI included 8 patients. There was no statistically significant difference in age, unaided and aided audiometry results between two groups.

Conclusions: Patients with increased K-HHIE score showed better improvements in all audiometric tests. But there was no statistically significant and consistent audiometric test to reflect patients' satisfaction with a HA, except for frequency pattern test of CAPD. According to K-IOI-HA questionnaire consisting of 7 questions about HA use rates and social value, patients with higher score did not necessarily show better audiometric results. There are other factors influencing HA satisfaction in real life situations such as fitting discomfort, cost, cosmetic and stigmatizing concerns. Therefore, the objective hearing test alone cannot sufficiently reflect the satisfaction of the patient with wearing a HA.