Consonant production and language skills in Mandarin-speaking children with cochlear implants

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摘要

Abstract

Objectives: To investigate the phonemic inventories of syllable-initial consonants in Mandarin-speaking children with cochlear implants, assessing the relationship between the children's mastery levels of consonant production and their receptive and expressive language skills. Design: Descriptive study. Setting: Chi-Mei Medical Center, Tainan, Taiwan. Patients: The 30 prelingually deaf children with cochlear implants who participated in the study ranged in age from 6 years to 12 years 6 months, and their age at implantation ranged from 2 years 3 months to 10 years 3 months. The average length of device experience was 3 years 7 months (range, 1 year 7 months to 6 years 5 months). None of the children was identified with concomitant learning disabilities. Outcome Measures: The 21 Mandarin syllable-initial consonants were elicited using a set of 105 pictures. Two language assessment tools were used to evaluate the children's receptive vocabulary skills as well as their overall receptive and expressive language development. Results: The mean ± SD score for correct consonant production was 57.9% ± 19.5%. Regarding the manner of articulation, plosives received the highest average correct percentage whereas nasals, affricates, fricatives, and the lateral approximant /l/were less frequently correct. The children's overall percentage of correct scores for consonant production and receptive vocabulary measure were significantly correlated (r=0.51; P=.005). Additionally, correlation coefficients were significant between the overall score for correct consonant production and both the scores for receptive language measure (r=0.65; P<.001) and expressive language measure (r=0.76; P<.001). The participants' consonant production skills were negatively correlated with age at implantation (r=-0.46; P=.01) and positively correlated with length of experience with cochlear implant (r=0.45; P=.02). Conclusions: Mastery levels of Mandarin syllable-initial consonants remained moderately low in prelingually deaf children with cochlear implants. The present results suggest a significant association between consonant production skills and language

development in these children.