Health-related Quality of Life in Romanian Cochlear Implant Patients

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ABSTRACT

Introduction: Cochlear implant is a well established treatment method in severe and profound hearing loss. It is important to assess the benefits in terms of health-related quality of life not only on auditory-verbal performances.

Material: Method: We compared the HRQoL between two groups, a hearing aided group (50 patients) and a cochlear implant group (84 patients), spotted in two subgroups, according to the age of implantation. We used the Nijmegen cochlear implant HRQoL questionnaire. All the implanted patients had MED-EL devices and more than 6 months of experience with the speech processor.

Results: Although there were differences between children with hearing aids and implanted children in all areas of HRQoL, in the physical area these differences were greater than for psychological and social domains. HRQoL was positively correlated with auditory performance, speech intelligibility and negatively correlated with age. HRQoL is positively influenced by the age. The correlation coefficient, R = 0.79 indicates the same significant correlation between the three variables, age, years of implantation and HRQoL. Although there were differences between children with hearing aids and implanted children in all areas of quality of life, in the physical area this difference was greater than for psychological and social domains.

Discussion: Cochlear implant improves the auditory performance, speech intelligibility and negatively affects the quality of life. Cochlear implant may have an important impact on quality of life.

INTRODUCTION

Health-related Quality of Life represents the individual perception of its social position, in his cultural value systems context and depending on its needs, standards and aspirations (1). HRQoL refers to patient’s perception related to disease and treatment impact on him, from physical, psychological and social point of view, as well as the individual’s ability to enjoy normal activities of a daily life, including the concept of functional capacity and well-being (2). Given that for severe to profound sensorineural hearing loss, hearing aids or cochlear implant do not cure hearing loss but correct a disability, it is necessary to assess therapeutic benefits also in terms of health-related quality of life.

MATERIALS AND METHODS

The study group chosen to assess the HRQoL in our implanted patients included children operated in ENT Clinic of Cluj County Emergency Hospital and children operated in other cochlear implant centers from our country. 84 patients in total. All assessed children were implanted with Medel devices, either Combi 40+ or Pulsar c100 (mostly) implants, and they used Tempor- and Opus I or II type sound processors. At time of study all patients were implanted unilaterally. The study was based on the Health-related Quality of Life assessment questionnaire specific to hearing loss and cochlear implant, developed by the Nijmegen Cochlear Implant Center. (3). The questionnaire was mailed to 102 children with unilateral MedEl cochlear implant, who had at least six months of experience with the implant, with the request to accept to collaborate at a study related to evaluation of implanted children and quality of life following the use of cochlear implant, ensuring data confidentiality. The questionnaire was completed by one of the parents or the person who take care of the child. From 102 questionnaires sent only 84 families responded and agreed to participate in the study. The control group had 50 unimpaired deaf children attending speech therapy courses in The Hearing Impaired Center in Cluj-Napoca. The questionnaire included items related to child hearing loss, family, educational environment and questions related to quality of life. Each subgroup had 10 questions with 6 answers on Likert scale, from 0 to 5, with 0 noting unfavorable responses and 5 points responses showing a excellent situation. For each subgroup was calculated a percentage score.

RESULTS

The cochlear implanted group consisted of 84 patients, aged between 19 and 21 months (mean 91.42±49.83), 35.7% female and 64.3% male. The age at implantation ranged from 12 to 191 months, with a mean age of 65.4±48.2 months. The cochlear implant use ranged between 6 and 92 months. The hearing loss onset was prelingual in all cases. The group of hearing aided children had 50 children aged between 15 and 134 months (mean 66.36±27.47 months), 44% females and 56% male. Hearing aids use ranged between 4 and 96 months. We compared the functional outcomes of hearing aid and cochlear implant calculating the difference between the two groups, both for intelligibility of speech, and the HRFQoL utility, using the univariate analysis of variance (ANOVA), (table 1)

Between auditory performance score (CAP) and speech intelligibility rate score (SIR) the correlation was positive, statistically significant, moderate for the hearing aid group and the group of children implanted before the age of 5 and strong for group of children implanted after the age of 5.

DISCUSSIONS, CONCLUSIONS

Cochlear implant cause real social and behavioral benefits, affecting cognitive skills improvement. In many studies it appears that after implantation there is an improvement of attention ability both visually and behaviorally, an improvement of nonverbal cognitive abilities, but also of visual and auditory functioning. One year after implantation is found an improvement of eye contact, a better voice control and gesturing reduction. (4,5) Cochlear implant improves not only auditory threshold and speech, but it is a factor that improves emotional maturity and self-esteem, academic performance, speech intelligibility and associated diseases on quality of life, using the average scores of quality of life subdomains.

REFERENCES

1. WHOQOL Group, Development of the World Health Organization WHOQOL-BREF.