THÈME

Results of computer assessment in children with a cochlear implant before and after speech processor replacement

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Abstract

It is well known that proper placement of the cochlear implant processor is important to ensure good speech perception. The purpose of this study is to extract statistical information that will be used for processor selection.

Indicator	**OPUS 2 (**after replacement**)**	**Rondo 3 (** before replacement**)**
Average speech perception level (dB)	45	40
Speed of speech acquisition (months)	12	8
Comfort level (score from 1 to 10)	7	9
Frequency of adjustments (once a year)	2	1
Number of successful communications (per month)	15	20
Level of satisfaction (score from 1 to 10)	6	8

Objects

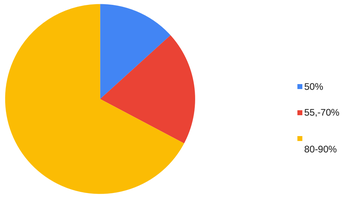
The study was based on the programming maps of 113 patients aged 11 to 14 years at the time of speech processor replacement. All subjects were implanted with a cochlear implant Sonata STANDARD model of the speech processor OPUS 2 at RIPIATM Pediatrics in the Department of ENT Diseases in Tashkent (Uzbekistan) in 2015.

Methods end Materials

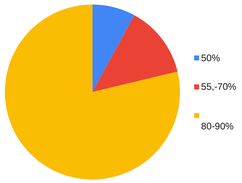
- In 2023, the speech processor for these patients was replaced with the Rondo 3 model. Based on the results of the computer assessment, the results of the patients before and after the replacement of the speech processor were divided.

Results

- The computer-based assessment found relationships between programming parameters and factors such as age at implantation and hearing experience. In 113 children, before replacing the OPUS 2 speech processor, according to the initial computer assessment, 15 children had a score below 50%, 22 children above 55-70% and 76 children above 80-90 %.
- Opus 2



Rondo 3



After replacing the speech processor with Rondo 3, a secondary computer assessment was carried out a month later and according to the assessment data, 9 children had a score below 50%, 15 above 55-70% and 89 children above 80-90%. The Rondo 3 audio processor has features such as directional microphone allows you to concentrate on sounds in front, wind noise suppression, adaptive intelligence changes settings to optimize hearing, suppresses impulse and background noise and these features have helped implanted children hear even better..

Conclusion

- This work provides information of great importance for programming speech processors, especially when subjective patient responses are insufficient. Use in our ENT service has significantly reduced the average time required for acceptable processor placement, particularly in children. Our research also shows that timely replacement of the speech processor is a good indicator of hearing and speech functionality.

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