LONG-TERM OUTCOMES OF UNIVERSITI KEBANGSAAN MALAYSIA COCHLEAR IMPLANT PROGRAM AMONG PEDIATRIC IMPLANTEES

Bee-See Goh\textsuperscript{a,c}, Noraziana Fadzilah\textsuperscript{b}, Asma Abdullah\textsuperscript{a,c}, Basyariatul Fathi Othman\textsuperscript{c}, Cila Umat\textsuperscript{d}

\textsuperscript{a} Department of Otorhinolaryngology and Head and Neck Surgery, Hospital Canselor Tuanku Mukhriz, Universiti Kebangsaan Malaysia Medical Center, Jalan Yaacob Latiff, 56000 Cheras, Kuala Lumpur, Malaysia
\textsuperscript{b} Department of Otorhinolaryngology, Hospital Sultanah Nora Ismail, Jalan Karma, Taman Soga, 83000 Batu Pahat, Johor, Malaysia
\textsuperscript{c} Institute of Ear, Hearing and Speech (Institute-HEARS), Block 8, 3rd Floor, Universiti Kebangsaan Malaysia, Jalan Temerloh, 53200 Kuala Lumpur, Malaysia

Conclusion: The result of this study showed majority of children implanted under UKM cochlear implant program attained oral language and were enrolled in the mainstream education. The single most factor that linked to the good outcomes is early age of implantation in which the delay of implantation is significantly reflected in the education enrollment.

Objectives: We report the first study on long-term outcomes of UKM paediatric cochlear implantation in terms of the proportion still using the device, modes of communication, educational placements, and their functional auditory/oral performance and factors that affected the outcomes measured.

Methods and Materials: This was a cross sectional observational study. All patients who have severe to profound SNHL implanted between 1995 to 2012 before 7 years old and had received at least 3 years of habilitation after implantation were recruited. Questionnaires were given to 126 parents/primary caregivers of the implantees. The first set of questionnaire assessed the children's usage of CI, their education placement, and modes of communication. The second set of questionnaire was the Parent's Evaluation Of Aural/Oral Performance of Children (PEACH) to evaluate the children's auditory functionality.

RESULTS

- 312 cases of paediatric cochlear implantation
- 245 UKM paediatric implantees fulfilled the inclusions and exclusions criteria; 126 parents/primary caregivers participated in the study (51.4%)
- 97.6% implantees are still using their CI
- 69.8% communicating orally, and 58.5% attending mainstream education
- Mean age for implantees that use oral communication and attend mainstream education is 38 months.
- Mean age of implantation of implantees that use non-oral communication is 44 months and attend non-mainstream education.
- The median score of PEACH rating scale is 87.5% in quiet which significantly correlates with an earlier age of implantation ($r = -0.235$, $p = 0.048$).

Simple logistic regression analysis performed to predict mode of communication using oral language/oral language with gestures and to predict mainstream school placement using age of implantation as predictor.

Age of implantation reliably predicts implantees (N=126) would communicate using oral language or oral language with (chi square = 4.149, $p < 0.05$, df = 1). Exp (B) value is 0.974, indicates that for every 1-month increase in the age of implantation, the odds of having oral language or oral language with gestures are lower by 2.6%.

Age of implantation also reliably predict implantees (N=118) would go to the mainstream education or not going to mainstream (chi square = 6.623, $p < 0.05$, df = 1). Exp (B) value is 0.967, indicates that every 1-month increase in the age of implantation, the odds of going to mainstream will be reduced by 3.3%.

Dr. Bee-See GOH
Senior Consultant, Professor
Department of Otorhinolaryngology and Head and Neck Surgery, Hospital Canselor Tuanku Mukhriz, Universiti Kebangsaan Malaysia Medical Center, Jalan Yaacob Latiff, 56000 Cheras, Kuala Lumpur.

Email: irenegbs@yahoo.com; beesee@ppukm.ukm.edu.my
Tel: +603 91456045; Fax: +603-91456675
Mobile: +60193209305