

## Complications and Outcomes of Cochlear Implantation in Children Younger than 12 Months: A Multicenter Study

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**Abstract :** Evidence suggests that Cochlear Implantation (CI) is a beneficial approach for auditory and speech skills improvement in children with severe to profound hearing loss. However, it remains controversial if implantation in children <12 months is safe and effective compared to older children. The present study aimed to determine whether children's ages affect surgical complications and auditory and speech development. The current multicenter study enrolled 86 children who underwent CI surgery at <12 months of age (group A) and 362 children who underwent implantation between 12 and 24 months of age (group B). The Categories of Auditory Performance (CAP) and Speech Intelligibility Rating (SIR) scores were determined pre-implantation, and "one-year" and "two-year" post-implantation. Four complications (overall rate: 4.65%; three minor) occurred in group A and 12 complications (overall rate: 4.41%; nine minor) occurred in group B. We found no statistically significant difference in the complication rates between the groups ( $p>0.05$ ). The mean SIR and CAP scores improved over time following CI activation in both groups. However, we did not find significant differences in CAP and SIR scores between the groups across different time points. Cochlear implantation is a safe and efficient procedure in children younger than 12 months, providing substantial auditory and speech benefits comparable to children undergoing implantation at 12 to 24 months of age. Furthermore, surgical complications in younger children are similar to those of children undergoing the CI at an older age.

**Keywords :** cochlear implant, Infant, complications, outcome

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