Early Intervention Of Hearing Loss In Children – Is a Neurological Emergency.

Bhavya B M, Suri N, Bhat T.
Senior resident, Dept of ENT, GMERS Medical College, Gandhinagar, Gujarat, India.

Background
- Hearing impairment - most critical sensory impairments with significant social, academic and psychological consequences.
- First 2-3 years of life – important period of speech and language development.
- Neural plasticity - reason for early referral and intervention.
- Central pathways show maximal plasticity within first 3.5 years (Fig 1 & 3).
- Even though parts of the infants brain are pre-programmed, auditory system does not mature without stimulation.
- Goal of early intervention - minimize the adverse effects of non-amplified hearing loss.

Materials and Methods
- Universal new born hearing screening implemented in many countries- screens babies on the day of birth irrespective of high risk/NICU babies. (Fig 2)
- Early intervention - younger cochlear implantation (<18 months) lead to better speech and language, increased chances of attending mainstream school, enhanced scholastic achievement, better quality of life.

Results
- Studies have shown – estimated 400,000 children with severe to profound hearing loss are under 4 years,
- 100,000 children are born with impairment every year.
- Not more than 1000 children under 4 years of age receive cochlear implants/any type of amplified hearing assistance.
- Most hearing impaired children in India are missed out on the critical age of speech and language development.

Conclusion
- It’s not about hearing alone- it’s about brain development.
- Early intervention and referral are pivotal to the development of speech and hearing skills in children before their auditory system reaches maximal neural plasticity.
- Each year lost to deafness significantly reduces the comprehension and expressive skills.

References