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Do not Let the Deaf to be Deaf:

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More than five percent of the population or four hundred and thirty million people need remedy for their disabling hearing loss according to the report published by World Health Organization.[1] Further projection of over seven hundred million is expected till 2050.[1] In other words one out of ten person will endure disabling hearing loss.[1]

A hearing loss of more than thirty five decibels in the better hearing ear is termed as disabling hearing loss.[2] Children are comparatively more affected by hearing impairement. In approximately 1.9 percent children there is difficulty in hearing and one out of every thousand children have permanent hearing loss when screened, although they may or may not having the symptoms.[2] Technically a child is said to be having permanent childhood impairment when there is established hearing impairment bilaterally =40dB hearing loss averaged over the frequencies 0.5KHz, 1KHz,2KHz and 4 KHz in the better hearing ear.[1,2]

In congenital type, the hearing loss is present since birth or very soon after the birth of a child. While the hearing loss happens afterward in the acquired type of hearing loss. Hearing loss can either be conductive type in which the sounds from external environment is unable to reach the middle ear via external ear, or sensory neural type in which there is problem in the inner ear or the auditory nerve is not functioning properly. In prelingual deafness the child is unable to hear and so does not acquire any capability to speak while when a child acquired the ability to speak and afterward has hearing impairment then it is said to be post lingual deafness.

In newborn babies cytomegalovirus is known to be the main culprit for hearing impairment. The baby is infected with the virus inside the uterus and termed as congenital cytomegalovirus infection. These babies are born with hearing as well as other problems. A part from this genetic abnormalities can also lead to deafness in the newborn and child. Some of the genetic defects are obvious at birth while other causing hearing loss can appear later in life. In older children the causes of hearing impairment are multiple including head trauma, exposure to loud sounds or music, drugs like aminoglycoside antibiotics, thiazide diuretics which are potential harmful to damage the inner ear leading to temporary or permanent hearing loss.[2] There are some viruses like mumps, rubella and measles which are notorious to auditory nerve. A damage to the ear by injury with foreign bodies like sharp pencil, battery cell and cotton buds are also more prevalent in the children leading to conductive type of hearing loss.[2]

Baby starts startling at a loud noise at the age of zero to four months. In this age the child begin to turn head to locate from where the sound is coming. At the age of 4 to 8 months, the child start smiling when someone spoke to the child or detect a close by sound. At this age simple words like "bye bye" are understandable for the baby. At one year of age the babies respond to their name, They can utter simple words like "mama". They use their voice to seek attention of the nearby people. At two years the child are able to understand and follow simple commands and can put two words together.

Based upon the aforementioned observations the parents should be able to pick the abnormal hearing earlier and report to the health care professionals to carry out hearing assessment and workup. In the developed countries the newborns delivered at hospitals are screened for hearing before discharge from hospital but in developing countries like ours we lack the facility at each hospital. The new born are screened initially with Otoacoustic emissions (OAE) in which the new borns are tested with a hand held device. The principle of the test is that echoes are produced by healthy ears in response to soft clicks. The test tell us "Pass" and "Fail". In case of pass no further tests are required as the hearing is normal while if the test shows "Fail" ,it means that

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there is a problem in the hearing and further tests are required. A second test known as Auditory brain stem response (ABR) is carried out to measure the electrical signals from brain in response to sounds. The test is painless and usually carried out when the child is sleeping. This test measures the severity of hearing loss and is beneficial in sensory neural hearing loss. On the basis of the test it is decided whether the child will get benefit from hearing aid or may go cochlear implant. Radiological investigations like MRI and CT Scan is done if the doctor suspect accompanying pathology.[3]

Once a diagnosis is made then comes management of a hearing impaired child. Reversible causes can be treated like removing the wax, treating the infection and surgical correction of structures in the ear. In some cases the cause of hearing loss cannot be reverted and measures are taken to restore the hearing to normal as near as possible. Conventional hearing aids are non surgical and can be fitted to a child to improve the hearing in mild to moderate hearing loss. But in severe to profound hearing loss the hearing aids cannot full fill the hearing requirement. These children are usually labeled as "Deaf". In deaf child the hearing loss is profound and is more than 95 decibels. Cochlear implant is the solution in deaf child and can be fitted to a child up to one year of age and not more than three years of age in order to get maximum benefit. The prelingual child is an ideal candidate for cochlear implant.[2,3]

A cochlear implant is a surgically implanted system which directly stimulates the auditory nerve in response to sounds. Cochlear implantation is not less than a blessing in the treatment and prognosis of children with severe to profound sensorineural hearing loss who are not benifitted from hearing aids. Children who receive cochlear implantation at a younger age is expected to reach normal age-equivalent developmental milestones.[4]

Children in whom cochlear implantation is done by one year of age show better language development in comparison to those who receive their cochlear implant between 13 and 24 months. This supports the provision of a cochlear implant within the first year of life to enhance the likelihood that a child with severe-to-profound hearing impairment will commence age appropriate language skills.[5]

To sum up the discussion, hearing impairment is very common and children are more prone. Early identification of hearing loss in children by parents, timely evaluation and hearing assesment,prompt intervention and rehabilitation is the key of not letting the deaf to be deaf.

REFERENCES

1. World Health Organization. /health-topics/hearing-loss. Available at: https://apps.who.int /news-room/fact-sheets/detail/deafness-and-hearing-loss, accessed February 2023.
2. Korver AM, Admiraal RJ, Kant SG, Dekker FW, Wever CC, Kunst HP, et al. DECIBEL-collaborative study group. Causes of permanent childhood hearing impairment. The Laryngoscope. 2011 Feb;121(2):409-16.
3. American Academy of Pediatrics, Joint Committee on Infant Hearing (JCIH). 2019 position statement: principles and guidelines for early hearing detection and intervention programs. J Early Hear Detect Interv. 2019;4(2):144-223.
4. Kim LS, Jeong SW, Lee YM, Kim JS. Cochlear implantation in children. Auris Nasus Larynx. 2010 Feb 1;37(1):6-17.
5. Leigh J, Dettman S, Dowell R, Briggs R. Communication development in children who receive a cochlear implant by 12 months of age. Otology & Neurotology. 2013Apr 1;34(3):443-50.