

Universal Neonatal Hearing Screening: The Best Answer to Childhood Hearing Loss

Shrestha BL

Worldwide distribution of hearing impairment in children is particularly a serious matter as it impairs the language and educational development. According to different studies and surveys, an estimated incidence of one to three per thousand live births have congenital or early childhood onset sensorineural deafness or severe-to-profound hearing impairment.^{1,2} Congenital and early childhood onset deafness or severe-to-profound hearing impairment causes the defect in auditory neuropathway of children at a later developmental stage if the intervention is not done immediately or within the development period of central auditory system. If early intervention will not be done then it consequences as delayed development of speech, language and cognitive skills with slow learning and difficulty progressing in school. Therefore, early detection is must for preventing the consequences. This is best performed by universal neonatal hearing screening (UNHS) through objective hearing assessment.

Currently, newborn hearing screening is performed via either otoacoustic emission (OAE) or automated auditory brainstem response (AABR) testing. In two systematic reviews, there was sufficient evidence to support that infants who screened earlier are identified earlier and also receive intervention earlier.^{2,3} So, it is clear that newborn hearing screening significantly lowers the age of diagnosis of moderate to severe hearing loss in children, with the greatest reductions in incidence occurring in children with moderate hearing loss.^{4,5} Multiple updated studies now indicate that infants who are diagnosed and receive intervention before six months of age score 20 to 40 percentile points higher on school-related measures (language, social adjustment and behavior) as compared to hearing-impaired children who receive delayed intervention.³⁻⁸

So, the benefit of UNHS program is identification of permanent hearing loss during the first few months of life and linked to medical, audiological and educational interventions for affected babies and their families.⁹

The successful newborn and infant hearing screening program have been implemented in many different countries with a variety of screening methods, protocols, and their linkages to existing health care, social and educational systems. But ironically in the developing country like ours there is still no national policy regarding the universal neonatal hearing loss. However, in our Dhulikhel Hospital we are regularly performing the neonatal hearing screening in all the newborns (both normal and high risk) with our own protocol.

(Department of ENT-HNS, Dhulikhel Hospital, Kathmandu University Hospital, Dhulikhel, Kavre, Nepal.
Email: bikash001@hotmail.com)

REFERENCES

1. Hyde ML. Newborn hearing screening programs: Overview. *J Otolaryngol.* 2005;34(Suppl 2):S70-8.[PubMed]
2. Nelson HD, Bougatsos C, Nygren P. Universal newborn hearing screening: Systematic review to update the 2001 US Preventive Services Task Force Recommendation. *Pediatrics.* 2008;122:e266-76. [PubMed]
3. American Academy of Pediatrics, Joint Committee on Infant Hearing Year 2007 position statement: Principles and guidelines for early hearing detection and intervention programs. *Pediatrics.* 2007;120:898-921. [PubMed]
4. Thompson DC, McPhillips H, David RL, Lieu TL, Homer CJ, Helfand M. Universal newborn hearing screening: Summary of evidence. *JAMA.* 2001;286:2000-10. [PubMed]
5. Controlled trial of universal neonatal screening for early identification of permanent childhood hearing impairment. Wessex Universal Neonatal Hearing Screening Trial Group. *Lancet.* 1998;352:1957-64.[PubMed]

6. Korver AM, Konings S, Dekker FW, et al. DECIBEL Collaborative Study Group Newborn hearing screening vs. later hearing screening and developmental outcomes in children with permanent childhood hearing impairment. *JAMA*. 2010;304:1701–8. [PubMed]
7. McCann DC, Worsfold S, Law CM, et al. Reading and communication skills after universal newborn hearing screening for permanent childhood hearing loss. *Arch Dis Child*. 2009;94:293. [PubMed]
8. Yoshinaga-Itano C, Coulter D, Thomson V. The Colorado Newborn Hearing Screening Project: Effects on speech and language development for children with hearing loss. *J Perinatol*. 2000;20(8 Pt 2):S132–7.[PubMed]
9. Deafness and hearing loss [Internet] Updated March 2015 Available from:<http://www.who.int/mediacentre/factsheets/fs300/en/>