Hearing Loss in Newborns with Cleft Lip and/or Palate

Enrica EK Tan, MBBS, MMed (Paeds) (S’pore), MBChB (Edin), MRCPC (UK), Karen YM Hee, BSc Nursing (Aust), Sok Bee Lim, MBBS, MMed (Paeds)(S’pore), Henry KK Tan, MD (S’pore), FRCS (Ed), FAMS (ORL), Vincent KL Yeow, FRCS (Glasgow), FRCS (Ed), FAMS (Plas Surg), Lourdes Mary Daniel, MBBS, MMed (Paeds) (S’pore), EdM (Harvard)

Abstract

Introduction: This study aims to review the results of hearing screens in newborns with cleft deformities. Materials and Methods: A retrospective audit of 123 newborns with cleft deformities, born between 1 April 2002 and 1 December 2008, was conducted. Data on the results of universal newborn hearing screens (UNHS) and high-risk hearing screens, age at diagnosis, severity/type of hearing loss and mode of intervention were obtained from a prospectively maintained hearing database. Results: Thirty-one of 123 newborns (25.2%) failed the first automated auditory brainstem response (AABR). Seventy percent of infants (56 out of 80) who passed the UNHS failed the high-risk hearing screens which was conducted at 3 to 6 months of age. Otolaryngology referral rate was 67.5% (83/123); 90.3% of 31 newborns who failed the first AABR eventually required otolaryngology referrals. Incidence of hearing loss was 24.4% (30/123; 25 conductive, 2 mixed and 3 sensorineural), significantly higher than the hospital incidence of 0.3% (OR: 124.9, 95% CI, 81.1 to 192.4, \( P < 0.01 \)). In terms of severity, 8 were mild, 15 moderate, 5 severe, 2 profound. Eighteen out of 30 infants (60%) were detected from the high-risk hearing screens after passing the first AABR. Conclusion: These newborns had a higher risk of failing the UNHS and high-risk hearing screen. There was a higher incidence of hearing loss which was mainly conductive. Failure of the first AABR was an accurate predictor of an eventual otolaryngology referral, suggesting that a second AABR may be unnecessary. High-risk hearing screens helped to identify hearing loss which might have been missed out early on in life or which might have evolved later in infancy.

key words: Malformation, Screening


1Department of Paediatric Medicine, KK Women’s and Children’s Hospital, Singapore
2Department of Neonatology, KK Women’s and Children’s Hospital, Singapore
3Department of Child Development, KK Women’s and Children’s Hospital, Singapore
4Department of Otolaryngology, KK Women’s and Children’s Hospital, Singapore
5Department of Plastic, Reconstructive & Aesthetic Surgery, KK Women’s and Children’s Hospital, Singapore
6Cleft & Craniofacial Centre, KK Women’s and Children’s Hospital, Singapore

Address for Correspondence: Dr Tan Enrica Ee Kar, Department of Paediatric Medicine, KK Women’s and Children’s Hospital, 100 Bukit Timah Road, Singapore 229899.
Email: enrica.tan.ek@kkh.com.sg