Objective: Determine the frequency-specific thresholds of auditory steady state response (ASSR) of Filipino children with absent auditory brainstem response (click-ABR) results.

Methods: This is a cross-sectional study analyzing the frequency-specific thresholds of auditory steady state response (ASSR) of Filipino children with absent auditory brainstem response (click-ABR) results. The study population comprised of 99 pediatric patients referred for hearing assessment using electrophysiologic techniques at the Ear Unit of the Philippine General Hospital. The subjects underwent hearing threshold evaluation using both evoked-potential techniques (click ABR and ASSR) within a one-month period from January 2009 to March 2014. The ASSR results of patients with absent click-ABR were collected and analyzed.

Results: There were 99 patients who underwent both ABR and ASSR. Of the 65 patients with absent ABR thresholds results, 13 patients had unilateral absent ABR while 52 had bilateral absent ABR results. The data of hearing tests from the combined 117 ears with absent ABR hearing tests were collected.

The proportion of children with ASSR thresholds with absent ABR per frequency were:
- 500 Hz - 45/117 (38.5%);
- 1000 Hz - 76/117 (64.0%);
- 2000 Hz - 63/117 (53.8%); and
- 4000 Hz - 41/117 (35.0%).

The proportion of children with ASSR thresholds with absent ABR per number of frequencies were:
- 4 frequencies - 19/117 (16.2%);
- 3 frequencies - 32/117 (27.4%);
- 2 frequencies - 22/117 (18.8%); and
- 1 frequency - 44/117 (37.6%).

Conclusion: In the absence of click-ABR response, ASSR may provide information about the levels of severe to profound hearing loss among children. The criteria of selection of candidates for intervention (hearing aids or cochlear implantation) should include results from hearing evaluation not only from behavioral and ABR thresholds but also from ASSR thresholds. This may ensure that exclusion of some children with severe and profound hearing loss who may benefit from the intervention will be minimized.

Keywords: profound sensorineural deafness, evoked response audiometry, hearing thresholds

With the implementation of universal newborn hearing screening in the world, including the Philippines, more children will be identified at birth with hearing loss and subsequently evaluated for intervention. For young children, early diagnosis of hearing loss and early intervention with amplification or cochlear implantation allow access to sound and the potential to develop speech, language and listening skills needed for oral communication. However, for a subset of hearing-impaired children with severe to profound hearing loss, current evaluation for...