Auditory Brainstem Responses and Tympanometry in Very Young Infants

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It has been claimed that tympanometry does not accurately reflect middle ear status in infants under 6 months of age. This study presents results which show the usefulness of tympanometry using multiple probe tones in identifying middle ear pathology. The results showed a high correlation between the click-evoked auditory brainstem response (ABR) threshold and the tympanogram obtained with multiple probe tones. Subjects with type B tympanograms were more likely to have elevated ABR thresholds and those with type A or C tympanograms were more likely to have normal ABR thresholds.

The Diagnostic Assessment of Infants Using Steady-State Evoked Potentials

Gary Rance, Field Rickards, David Beer, Laurie Cohen and Graeme Clark

This paper examines the relationship between the steady-state potential and behavioural thresholds obtained in two groups of young children. The first group consists of 10 babies referred to the Victorian Children’s Hearing Centre following abnormal findings on screening ABR assessments. The second group contains 20 difficult to test infants who had unconfirmed hearing losses at the time of the SSEP assessment.

The hearing levels predicted by the regression lines (described in the companion paper presented at this conference) were in close agreement with the behavioural levels obtained subsequently from children in both groups.

Accuracy of Behavioural Threshold Prediction Using Steady-State Evoked Potentials

Gary Rance, Field Rickards, Laurie Cohen and Graeme Clark

This paper examines the confidence with which predictions of hearing level can be made using the steady-state evoked potential (SSEP) technique. Steady-state evoked potentials are scalp potentials that can be elicited in response to sinusoidally amplitude and/or frequency modulated tones in sleeping or awake subjects. SSEP thresholds were obtained using frequency specific stimuli at octave frequencies between 250Hz and 4000Hz in 25 children and 35 adults with varying degrees of sensori-neural hearing loss. These levels, determined automatically by a computerised detection system, were then compared with thresholds obtained behaviourally. Linear regression analyses of this data have shown that the SSEP procedure allows objective estimates of hearing level to be made for a range of carrier frequencies to within 10dB accuracy on 96% of occasions.
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Title:
The diagnostic assessment of infants using steady-state evoked potentials [Abstract]

Date:
1994

Citation:

Persistent Link:
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