

High Click Repetition Rate ABR을 이용한 신생아 청각 선별검사

김 상 렬

ABR with High Click Repetition Rate for Universal Newborn Hearing Screening

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—ABSTRACT—

Background and Objectives : Sensitivity and specificity of an ABR screening procedure are higher than those achieved using OAE-based newborn hearing screening. However, the time for preparation and ABR recording is longer than required for OAE. The aim of our study was to develop a quicker ABR screening algorithm. A new, fast screening algorithm based on ABR recorded at a high click repetition rate is proposed. Patients and **Methods** : The 5 normal hearing adults participated in the preliminary study. 52 normal neonates (142 ears) and 23 high risk neonates (46 ears) have been screened using click stimuli ABR with high repetition rate from Sep.2003 through Mar.2005. The test was satisfactory when a pass result was attained (stage 1). When the infant woke soon after the testing began, a new start was made. Such incidences were counted, but were not included in the specificity calculation. When after the measurement period of 120 seconds the summation curve was close to being a pass, the measurement was repeated and regarded as a retest (stage 2). Based on these data, the following aspects were evaluated : test time (preparation and recording time), pass rate, refer rate and specificity. **Results** : Preparation and recording time of stage 1 were 14.2 seconds and 33.2 seconds, those of stage 2 were 6.1 seconds and 33.4 seconds, respectively. The pass rates of two stages were 95.3% and 85.7%, the refer rates of two stages were 4.6% and 14.2%, respectively. The specificity of stage 1 was 95.3%. **Conclusion** : ABR with high click repetition rate for universal newborn hearing screening is less time consuming, efficient, and reliable screening method. (J Clinical Otolaryngol 2005;16:79-83)

KEY WORDS : Otoacoustic emission · Auditory brainstem response · Screening.

서 론

가

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OAE
 ABR
 1
 high repetition
 BERAphone®
 ABR
 3
 가
 (primary screening)
 (fail rate) 4%
 95%
 가 3
 1)
 가
 (EOAE)
 (AABR)
 가
 가
 40 dBnHL,
 120
 93
 (pass)
 (stage 1). 가
 (stage 2)
 (refer) 3
 stage 1, 2
 , stage 1, 2
 high click repetition
 (screening al-
 gorithm)
 high click repetition rate
 가
 가 5
 100%

결 과

대상 및 방법

가 5 (preparation time)
 (measuring time)
 2003 9 2005 3 8
 75 (150) 15.5
 가 52 (104),
 가 23 (46) , Stage 1
 가 39 , 가 36 가

: High Click Repetition Rate ABR

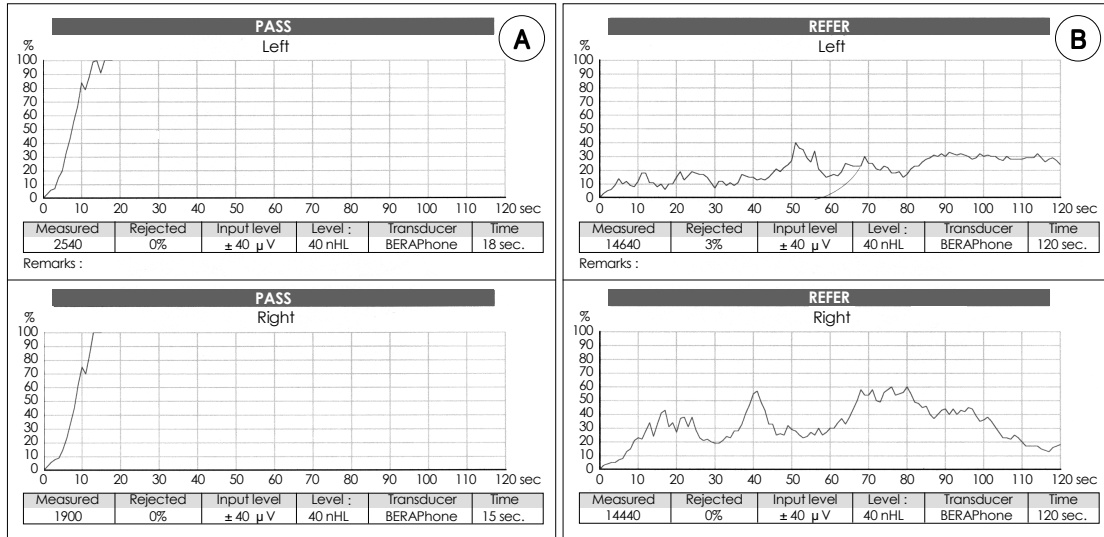


Fig. 1. ABR with high repetition rate results recorded from a neonate (A) and an auditory neuropathy adult (B).

Table 1. Summary of the hearing screening results using ABR with high repetition rate

		Total (150 ears)	
Stage 1	(ears)	Stage 2	(ears)
Normal neonate 104			
Pass	102	Pass	2
Refer	2	Refer	0
NICU neonate 46			
Pass	41	Pass	4
Refer	5	Refer	1

95.3%(143), 가
 4.6%(7) , 가 95.3% (Fig. 1).
 가 98.0%(102),
 가 1.9%(2),
 가 89.1%(41), 가
 10.8%(5) .
 98.0%, 89.1% (Table 1).
 14.2
 33.2 .

고 찰

Stage 2

Stage 1

가
 85.7%(6), 가 가
 14.2%(1) (Table 1).
 60 dB 4)5)
 가
 6.1 33.4 6)7)
 가 .

가 ,

10~20

11)12) high

repetition rate

93 가

15 35

1

가 가

8)

9)

13)14)

가 가

10% 가 1

가 가

가 가

가 가

repetition rate

high

1

10)

High repetition rate

4.6% 95.3%

결 론

high repetition rate

중심 단어 :

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